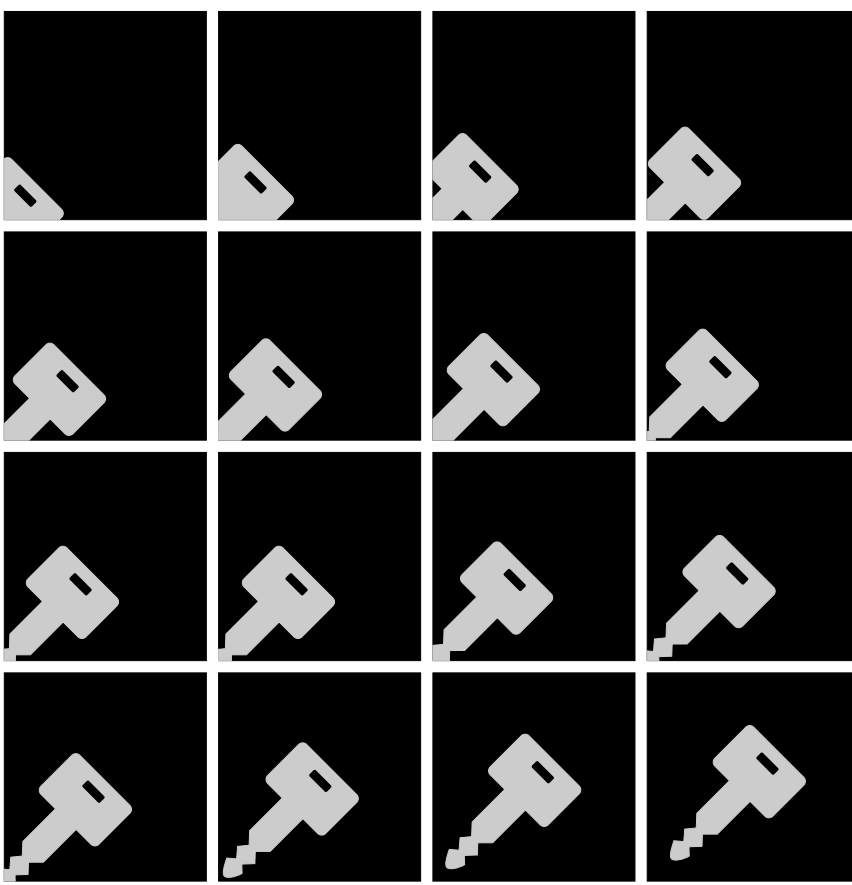
FUSO

# Owner's Manual

## 2008 Model

# FE/FG



Pub. No. MH997383

## OWNER AND VEHICLE INFORMATION

OWNER NAME: _____

USER/COMPANY NAME: _____

MAILING ADDRESS: _____

CITY, STATE: _____ ZIP: _____

VEHICLE IDENTIFICATION NUMBER: _____

DATE OF DELIVERY (WARRANTY START DATE): _____ / _____ / _____
MO. DAY YR.

**SELLING DEALER IMPRINT HERE**

# Foreword

Thank you for purchasing a Mitsubishi Fuso FE, FG Truck.

This Owner's Manual explains proper vehicle handling, simple maintenance practices, and the periodic maintenance schedule to ensure that you are able to drive your vehicle safely and comfortably.

As improper use of the vehicle may result in a breakdown or cause an accident, we urge you to read this handbook thoroughly before operating the vehicle.

Please keep this manual in the vehicle so it is always available for reference. If you sell the vehicle, make sure the next owner receives this manual and is aware of its contents.

MITSUBISHI FUSO
TRUCK OF AMERICA, Inc.

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# Reading the handbook

- The information in this manual is accurate as of the time of printing. Because of differences in specifications and improvements that may be added after preparation of this manual, some of the explanations and illustrations in this handbook may not apply to your vehicle.
- The following symbols are used throughout this handbook:

  OPT : optional equipment
  ⇨📖 : requests that reader should refer to the page of the number indicated.

- This manual contains important cautionary instructions and supplementary information under the following four headings which identify the nature of the instructions and information:

| | |
|---|---|
| ⚠ **DANGER** | Precautions that should be taken when handling dangerous substances such as battery fluid in order to prevent a serious injury or death |
| ⚠ **WARNING** | Precautionary instructions, which, if not observed, could result in serious injury or death. |
| ⚠ **CAUTION** | Precautionary instructions, which, if not observed, could result in damage to or destruction of equipment or parts. |
| *NOTE:* | Suggestions or supplementary information for more efficient use of equipment or better understanding. |

- California Proposition 65 Warning

⚠ **DANGER**

**THIS PRODUCT CONTAINS OR EMITS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.**

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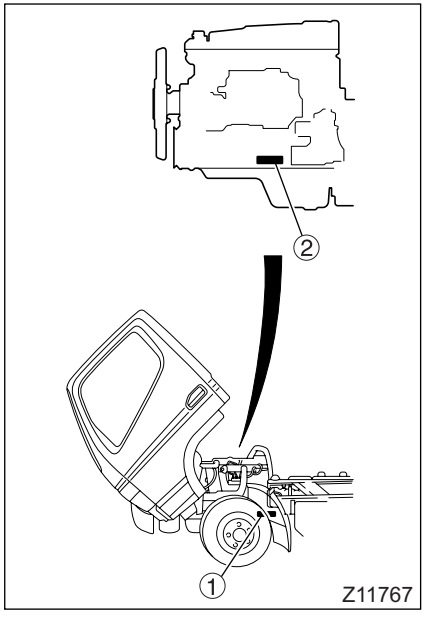



## Chassis and engine numbers

### 1 Chassis number

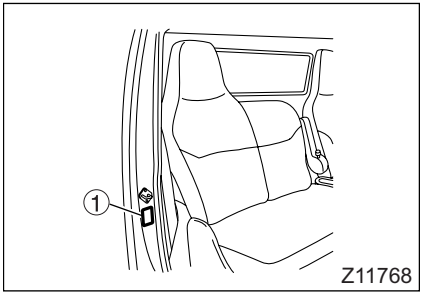
The chassis number ① is indicated on the left frame, near the left front wheel.

Example: FE84DD - □□□□□□
Chassis number
Vehicle model

### 2 Engine number

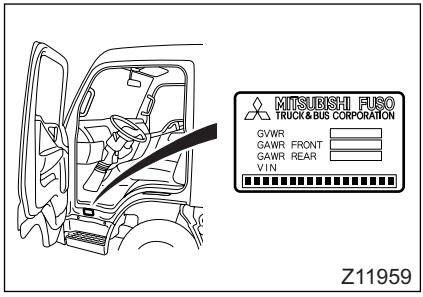
The engine number ② is indicated on the left side of the crankcase.

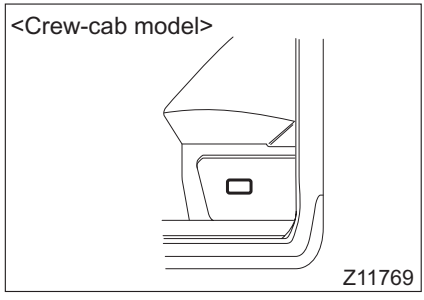
Example: 4M50 - □□□□□□
Engine number
Engine model




## Powerline label

The powerline label ① located in the position shown indicates the vehicle model, chassis number and information relevant to the vehicle's power transmission components.




## Vehicle identification number (VIN)

The VIN is stamped on a plate that is located as shown in the illustration.

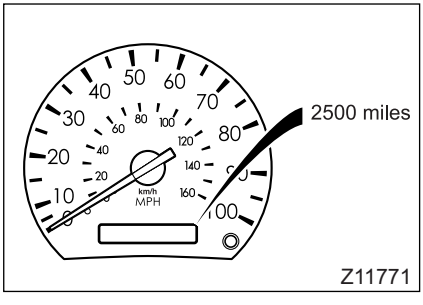
The VIN comprises 17 numbers and letters, the meanings of which are listed below.

| J | L | 6 | A | A | D | 1 | S | ■ | 8 | K | ■■■■■■ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ |

| | | |
|---|---|---|
| ① Country | J: | Japan |
| ② Make | L: | Mitsubishi Fuso |
| ③ Type | 6: | Incomplete vehicle |
| ④ Gross vehicle weight / Brake system | A: | 10,001 to 14,000 lbs. / Hydraulic |
| | B: | 14,001 to 16,000 lbs. / Hydraulic |
| | C: | 16,001 to 19,500 lbs. / Hydraulic |
| ⑤ Line | A: | FE83D |
| | B: | FE84D |
| | C: | FE85D |
| | D: | FE84■W |
| | E: | FG84D |
| ⑥ Series (wheel base) | D: | 2.9 to 3.19 m (9.51 to 10.46 ft.) |
| | E: | 3.2 to 3.49 m (10.49 to 11.44 ft.) |
| | F: | 3.5 to 3.79 m (11.48 to 12.43 ft.) |
| | G: | 3.8 to 4.09 m (12.46 to 13.41 ft.) |
| | H: | 4.1 to 4.39 m (13.45 to 14.40 ft.) |
| | J: | 4.4 to 4.69 m (14.43 to 15.38 ft.) |
| | K: | 4.7 to 4.99 m (15.41 to 16.37 ft.) |
| ⑦ Cab chassis type | 1: | Chassis cab |
| ⑧ Engine | S: | 4.899 L Diesel turbo charged and charge air cooled |
| ⑨ Check digit | | |
| ⑩ Model year | 8: | 2008 |
| ⑪ Plant | K: | Kawasaki |
| ⑫ Plant sequential number | | |

## Maintenance

Checking your vehicle at regular intervals is very important for maximizing performance and extending service life. It is recommended that you make a habit of performing the following inspections.
This manual describes simple maintenance checks and procedures that can be carried out by the owner. If you have difficulty or your vehicle needs maintenance work that is not shown in this manual, please refer to an authorized dealer.



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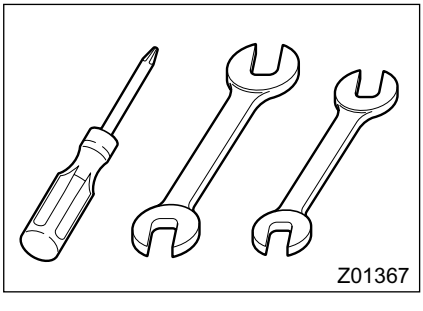
### 1 New vehicle inspection

After you have driven the first 4,000 km (2,500 miles), your vehicle requires a special inspection and adjustments to compensate for the initial settlement of various parts. When the distance has been reached, have your vehicle inspected by an authorized dealer by showing them this Owner's Manual.

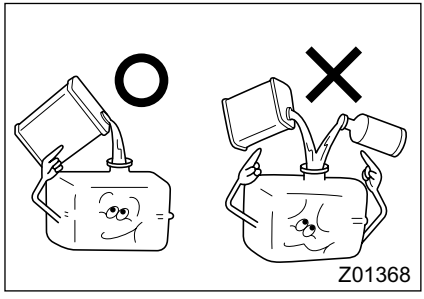
### 2 Pre-operational check

Make a habit of checking your vehicle at the start of every day's operation. This will ensure safe and comfortable operation. ⇨ P. 12-9


Z01367

### 3 Periodic inspection

In addition to maximizing the vehicle's working life, regular inspections also help prevent accidents. Periodic inspection is based on either the distance traveled (odometer reading) or period of use (months/years).
The intervals between and content of periodic inspections are as shown in the Maintenance Schedule section. Please adhere to the maintenance schedule carefully.




## Fuels

Use only diesel fuels conforming to the following recommendations, without any additives, for diesel engines installed in Mitsubishi Fuso trucks.

### 1 Diesel-fuel properties

The following recommendations concerning diesel fuel used with Mitsubishi Fuso diesel engines are given for optimum fuel economy and performance.

| Use condition | Recommendation |
|---|---|
| Normal operation at temperatures above –12°C (10°F). | ASTM D-975 Grade Ultra Low Sulfur Grade 2-D* |
| Operation at temperatures below –12°C (10°F), or long-hour no-load operation. | ASTM D-975 Grade Ultra Low Sulfur Grade 1-D* |

*NOTE:*
** ASTM is an acronym for the American Society for Testing and Materials which recommends fuel containing 0.0015% – basis 15 ppm sulfur or less sulfur content.*
*Note that a sulfur content exceeding 0.0015% – basis 15 ppm sulfur deteriorates the performance of emission control device.*

To meet fuel requirements, it is necessary to obtain cooperation from a reputable fuel oil supplier. Both fuel suppliers and users are responsible for keeping fuel clean.

### 2 Diesel fuel to be used in your engine

Use only a ultra low sulfur diesel fuel (with a sulfur content of 15 ppm or lower) for refueling your Mitsubishi Fuso diesel engine. Otherwise, the catalyst inside the diesel particulate filter (DPF) will not work effectively and the DPF's performance of removing small particles (particulate matter or PM) in exhaust gases will be degraded. Furthermore, your truck will not meet emission regulations if you replenish it with a non-approved fuel.

### 3 Danger of fire and explosion by using mixed fuel

Fuel containing 5% gasoline has a flash point as low as 0°C (32°F), which can lead to a fire or explosion while the engine is running.

**⚠ DANGER**

**NEVER MIX DIESEL FUEL WITH GASOLINE, GASOHOL OR ALCOHOL.**
**USE OF FUEL MIXED WITH ONE OR MORE OF THESE COULD LEAD TO A FIRE OR EXPLOSION INVOLVING SERIOUS INJURY, DEATH OR PROPERTY DAMAGE. IF YOU ACCIDENTALLY USE GASOLINE OR ALCOHOL WHEN REFUELING THE VEHICLE, REMOVE ALL OF IT FROM THE FUEL SYSTEM.**

### 4 Adverse effects of mixed fuel on engine

Using diesel fuel mixed with gasoline, alcohol, or both, has the following adverse effects on the engine:

- Fuel viscosity becomes lower, resulting in excessive wear, damage, and failure of fuel system parts.
- Difficulty in starting the engine will result due to a reduced cetane number.

**⚠ CAUTION**

- **The lower the cetane number, the more likely internal engine damage will occur.**
- **Do not add antifreeze agents or other substances to the fuel. They could damage the engine's fuel injection system.**
- **If the fuel tank cap and breather (air hole) become so dirty that the breather gets blocked, the fuel tank may deform and the fuel injection system may fail. Be sure to clean them regularly.**

## 5 Refueling

**⚠ WARNING**

- **Stop the engine before fueling.**
- **Never smoke when fueling since diesel fuel could ignite or explode.**
  **Never operate lighters or other items that emit sparks.**
- **If you inadvertently put gasoline in the fuel tank, pump it all out. Running the engine with gasoline in the tank could cause a fire or explosion endangering your or other people's lives.**

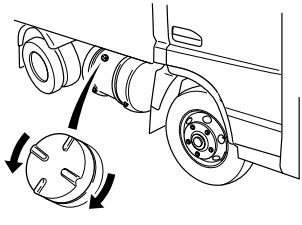
**⚠ CAUTION**

**Be careful not to allow the engine to run out of fuel. Engine stall resulting from an empty tank could cause damage to the fuel injection system.**

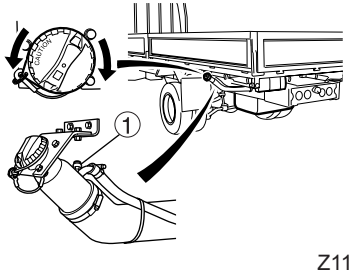
*NOTE:*
*Air will be present in the fuel system after the engine has run out of fuel. This air will prevent the engine from restarting even after it is adequately refueled. You must bleed the fuel system before the engine can be started.*

⇨ P. 13-27

<125-liter fuel tank>



<113-liter fuel tank>




Z11891

- **125-liter fuel tank**

The fuel tank is on the right-hand side of the vehicle. To open the cap, slowly turn it counterclockwise. To close the cap, turn it fully clockwise.

| Fuel tank capacity |
|---|
| 125 liters (33 gallons) |

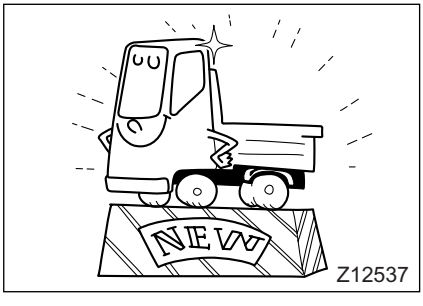
- **113-liter fuel tank** OPT
  **<FE: other than Crew-cab models>**

The fuel tank is at the rear of the vehicle. To open the fuel tank cap, slowly turn it counterclockwise. To close the cap, turn it clockwise until you hear a click.

| Fuel tank capacity |
|---|
| 113 liters (29.8 gallons) |

**⚠ WARNING**

- **When filling the fuel tank using a gun-type fuel pump, do not continue pumping after the pump automatically stops. (The tank is full at this point.) When filling the fuel tank using any other method, stop as soon as the surface of the fuel becomes visible through the opening of the fuel filler. If you supply so much fuel that it comes up to the opening, fuel may leak though the check valve ① when the vehicle starts moving and when it stops moving. If fuel leaks, carefully wipe it all up to prevent the risk of fire.**
- **If the pointer of the fuel gauge is above the "F" mark, do not add the fuel any more.**



Z12537

## Handling of the new vehicle

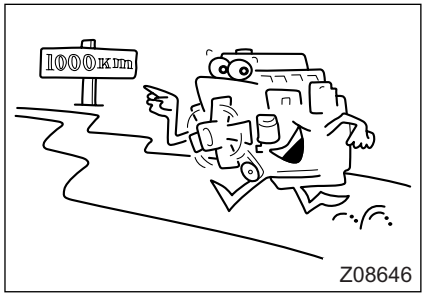
The way the vehicle is handled when new greatly affects its subsequent performance and service life. Observe the following precautions when handling the new vehicle.

### 1 Maintenance

The "new vehicle inspection" is very important for extending the service life of your vehicle. We strongly recommend that you have this inspection carried out by an authorized dealer. Be sure to give the dealer this manual at that time.
During the initial run-in period, oil is quickly contaminated. Replace the following oils and oil filter elements at the time of the "new vehicle inspection".

At 4,000 km (2,500 miles)

- Engine oil
- Manual transmission gear oil
- Transfer gear oil <FG>
- Front axle housing gear oil <FG>
- Rear axle housing gear oil




### 2 Maximum engine speed during run-in period

To avoid overburdening a new engine, limit engine RPM to that indicated below for the first 1,000 km (600 miles).
Then, run in your vehicle step by step at various speeds, beginning with low gears.

| Maximum engine RPM during run-in period |
|---|
| 1,800 rpm |

## Reporting safety defects

If you believe that your vehicle has a defect that could cause a crash or could cause injury or death, you should immediately inform both the National Highway Traffic Safety Administration (NHTSA) and the Mitsubishi Fuso Truck of America, Inc. (MFTA).
If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or MFTA.
To contact NHTSA, you may either call the Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153) or write to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, DC 20590.
You can also obtain other information about motor vehicle safety from the Vehicle Safety Hotline.
For further information, please visit the following NHTSA website:
http://www.safercar.gov

## Obtaining service

At Mitsubishi Fuso Truck of America, Inc. (MFTA), we are proud of the quality and workmanship that is built into every MFTA Truck. We are equally proud of our corporate commitment to promote the highest possible degree of customer satisfaction with our products and services.

Today's trucks are extremely complex and are comprised of an enormous number of individual parts. Occasionally, a failure of one of these parts may occur. Should you experience such a failure, we are confident that you will find an Authorized Dealer prepared to provide you with high quality service. Every Authorized Dealer has trained personnel, plus the tools and equipment necessary to provide for your various service needs. In the event that a problem arises, we ask you to follow the procedure outlined as follows, and in the sequence listed:

**STEP 1: Contact your Nearest Authorized Dealer**

This is the most direct and expedient way to obtain service. Each Authorized Dealer has the ultimate responsibility for providing the services and repairs you may need. We recommend that you contact the Service Manager of your nearest Authorized Dealer for assistance. In the event that you feel additional assistance is required, ask to speak to the General Manager of the Authorized Dealer.

**STEP 2: Contact MFTA**

After the completion of Step 1, and in the event that your nearest Authorized Dealer has been unable to satisfactorily resolve the problem, please contact MFTA's Customer Service Representative at **1-877-711-0707**.

Please be prepared to provide the following information when you call:

- Your Name, Company Name, Address, Telephone Number
- Vehicle Model
- Vehicle Model Year
- Vehicle Identification Number
- Mileage
- Name of Dealer contacted under Step 1, if applicable
- Details of the Complaint/Comment

You also may correspond with the Customer Service Representative in writing, addressed to:

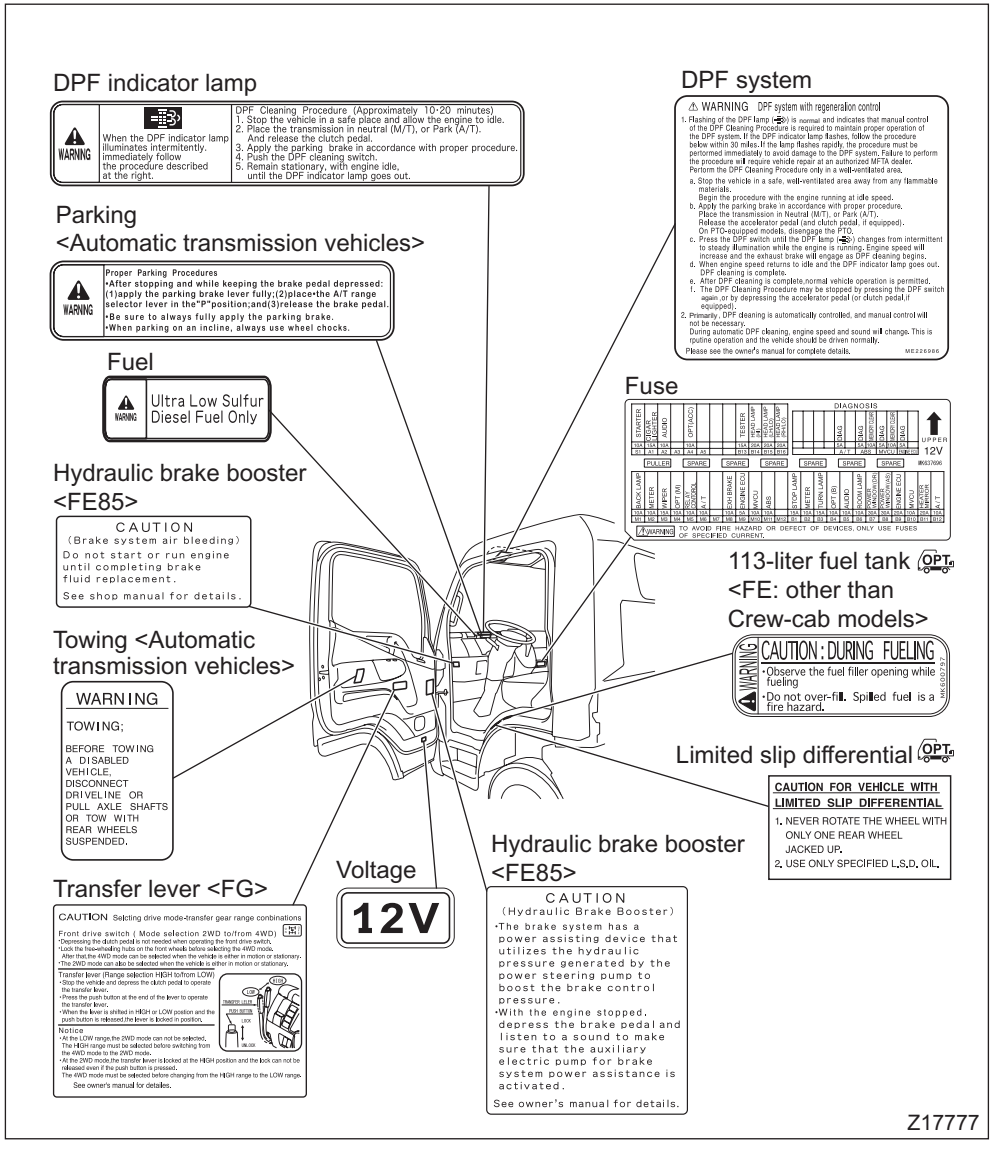
MITSUBISHI FUSO TRUCK OF AMERICA, INC.
CUSTOMER SERVICE REPRESENTATIVE
2015 CENTER SQUARE RD.
LOGAN TOWNSHIP, NJ 08085

# 2. Warning labels

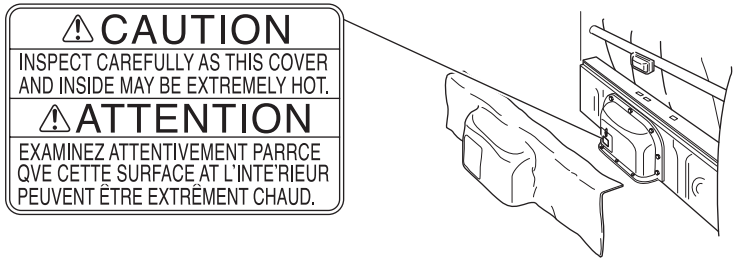
Locations in cab ..... 2-3
Locations outside cab ..... 2-5

- The caution and warning labels show important information. Be sure to read them before using the vehicle.
- If any label has peeled so it is difficult to read, is scratched or otherwise damaged, or has peeled off completely, please inform an authorized dealer. The warning and caution labels apply only to the vehicle itself, not to any equipment mounted on the vehicle. For information on caution and warning labels that apply to equipment mounted on the vehicle, please refer to the Owner's Manual supplied by the manufacturer of the equipment.
- The caution and warning labels are located in the cab as shown below. Samples of these labels are indicated in this and following pages.

# Locations in cab

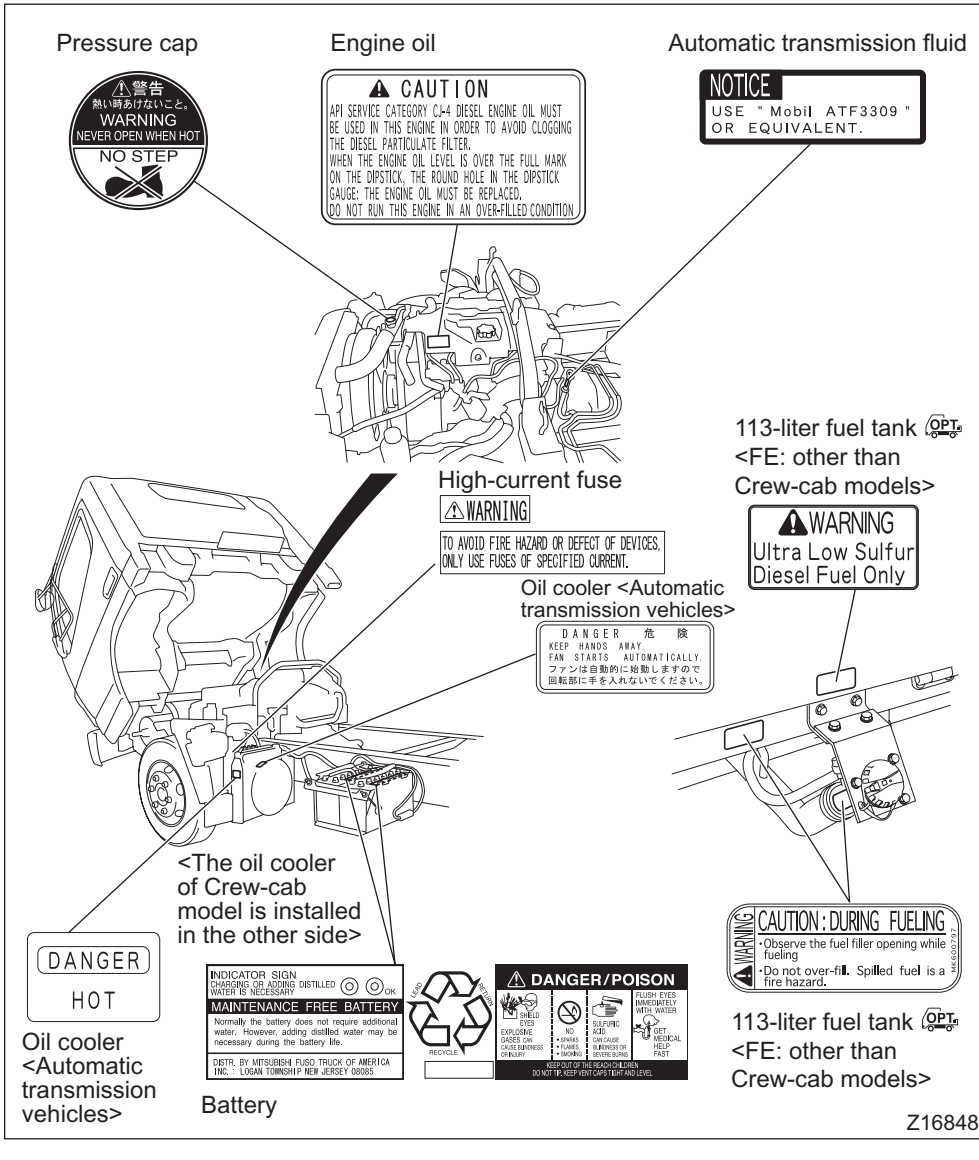

DPF indicator lamp
WARNING
When the DPF indicator lamp illuminates intermitently. immediately follow the procedure described at the right.
DPF Cleaning Procedure (Approximately 10-20 minutes)
1. Stop the vehicle in a safe place and allow the engine to idle.
2. Place the transmission in neutral (M/T), or Park (A/T).
And release the clutch pedal.
3. Apply the parking brake in accordance with proper procedure.
4. Push the DPF cleaning switch.
5. Remain stationary, with engine idle,
until the DPF indicator lamp goes out.
DPF system
WARNING DPF system with regeneration control
Please see the owner's manual for complete details.
Parking
<Automatic transmission vehicles>
WARNING
Proper Parking Procedures
•After stopping and while keeping the brake pedal depressed:
(1)apply the parking brake lever fully;(2)place the A/T range selector lever in the "P" position;and(3)release the brake pedal.
•Be sure to always fully apply the parking brake.
•When parking on an incline, always use wheel chocks.
Fuel
WARNING
Ultra Low Sulfur Diesel Fuel Only
Fuse
DIAGNOSIS
STARTER
REAR ALARM
OPT(ACC)
TESTER
HEAD LAMP
ENGINE ECU
ENGINE STOP RELAY
MAG
MAG
MAG
MAG
MAG
UPPER
12V
FULLER
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
WARNING
TO AVOID FIRE HAZARD OR DEFECT OF DEVICES, ONLY USE FUSES OF SPECIFIED CURRENT.
Hydraulic brake booster
<FE85>
CAUTION
(Brake system air bleeding)
Do not start or run engine until completing brake fluid replacement.
See shop manual for details.
113-liter fuel tank OPT
<FE: other than Crew-cab models>
WARNING
CAUTION : DURING FUELING
•Observe the fuel filler opening while fueling
•Do not over-fill. Spilled fuel is a fire hazard.
Towing <Automatic transmission vehicles>
WARNING
TOWING;
BEFORE TOWING A DISABLED VEHICLE, DISCONNECT DRIVELINE OR PULL AXLE SHAFTS OR TOW WITH REAR WHEELS SUSPENDED.
Limited slip differential OPT
CAUTION FOR VEHICLE WITH LIMITED SLIP DIFFERENTIAL
1. NEVER ROTATE THE WHEEL WITH ONLY ONE REAR WHEEL JACKED UP.
2. USE ONLY SPECIFIED L.S.D. OIL.
Voltage
12V
Hydraulic brake booster
<FE85>
CAUTION
(Hydraulic Brake Booster)
•The brake system has a power assisting device that utilizes the hydraulic pressure generated by the power steering pump to boost the brake control pressure.
•With the engine stopped, depress the brake pedal and listen to a sound to make sure that the auxiliary electric pump for brake system power assistance is activated.
See owner's manual for details.
Transfer lever <FG>
CAUTION Selecting drive mode-transfer gear range combinations
Front drive switch ( Mode selection 2WD to/from 4WD)
•Depressing the clutch pedal is not needed when operating the front drive switch.
•Lock the free-wheeling hubs on the front wheels before selecting the 4WD mode.
After that,the 4WD mode can be selected when the vehicle is either in motion or stationary.
•The 2WD mode can also be selected when the vehicle is either in motion or stationary.
Transfer lever (Range selection HIGH to/from LOW)
•Stop the vehicle and depress the clutch pedal to operate the transfer lever.
•Press the push button at the end of the lever to operate the transfer lever.
•When the lever is shifted in HIGH or LOW position and the push button is released,the lever is locked in position.
Notice
•At the LOW range,the 2WD mode can not be selected.
The HIGH range must be selected before switching from the 4WD mode to the 2WD mode.
•At the 2WD mode,the transfer lever is locked at the HIGH position and the lock can not be released even if the push button is pressed.
The 4WD mode must be selected before changing from the HIGH range to the LOW range.
See owner's manual for details.
Z17777

Engine inspection hatch
<Crew-cab models>

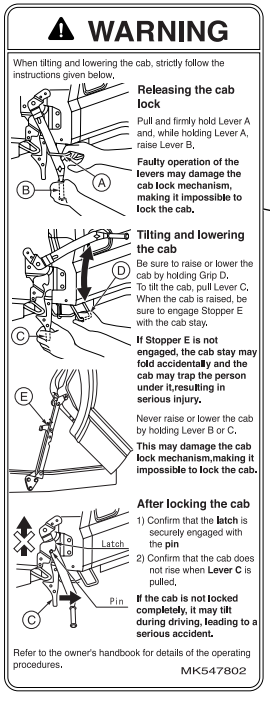

⚠CAUTION
INSPECT CAREFULLY AS THIS COVER AND INSIDE MAY BE EXTREMELY HOT.
⚠ATTENTION
EXAMINEZ ATTENTIVEMENT PARRCE QVE CETTE SURFACE AT L'INTE'RIEUR PEUVENT ÊTRE EXTRÊMENT CHAUD.

Z17778

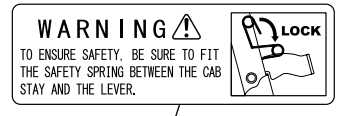
## Locations outside cab

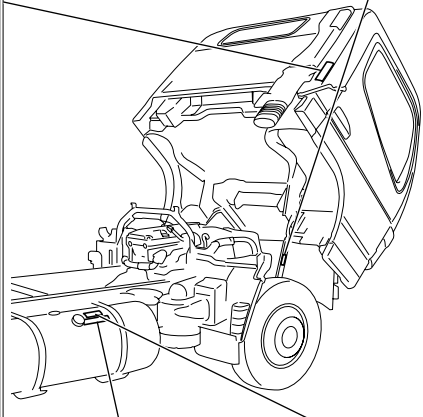


Cab tilt function
<Vehicles other than Crew-cab models>


WARNING
When tilting and lowering the cab, strictly follow the instructions given below.
Releasing the cab lock
Pull and firmly hold Lever A and, while holding Lever A, raise Lever B.
Faulty operation of the levers may damage the cab lock mechanism, making it impossible to lock the cab.
Tilting and lowering the cab
Be sure to raise or lower the cab by holding Grip D.
To tilt the cab, pull Lever C. When the cab is raised, be sure to engage Stopper E with the cab stay.
If Stopper E is not engaged, the cab stay may fold accidentally and the cab may trap the person under it,resulting in serious injury.
Never raise or lower the cab by holding Lever B or C.
This may damage the cab lock mechanism,making it impossible to lock the cab.
After locking the cab
1) Confirm that the latch is securely engaged with the pin
2) Confirm that the cab does not rise when Lever C is pulled.
If the cab is not locked completely, it may tilt during driving, leading to a serious accident.
Refer to the owner's handbook for details of the operating procedures.
MK547802
A
B
C
D
E
Latch
Pin

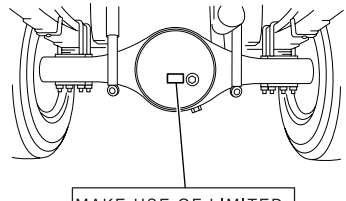
Cab tilt function
<Vehicles other than Crew-cab models>



125-liter fuel tank

125-liter fuel tank

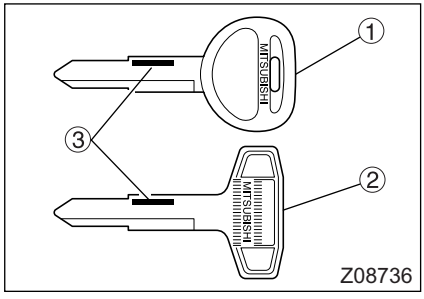


Limited slip differential OPT

Z17822

# 3. Opening and closing

Starter key ..... 3-2
Doors ..... 3-2
Central door locks ..... 3-4
Keyless entry system ..... 3-5
Entering and leaving the vehicle ..... 3-10
Door window glass ..... 3-12




## Starter key

- There are two starter keys: a main key ① and a sub key ②.
  You can use either of these starter keys for locking/unlocking the doors and starting/stopping the engine.
- Please make a note of the starter key number ③. You can purchase additional starter keys from an authorized dealer.

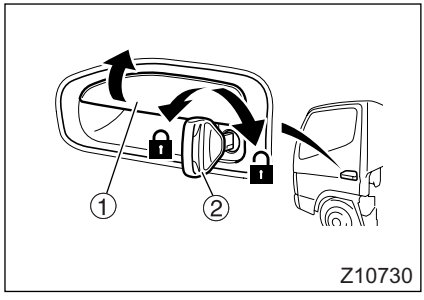
## Doors

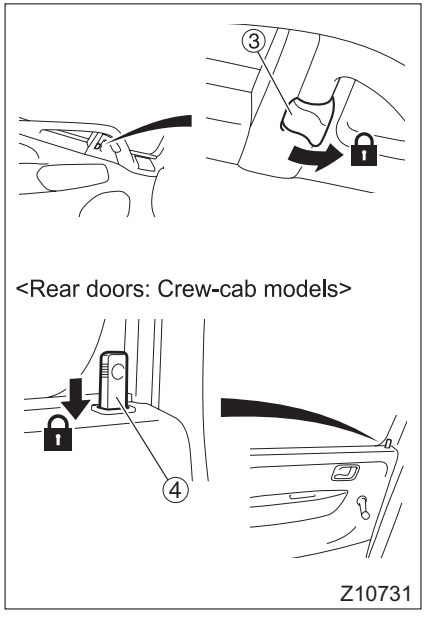
**⚠ WARNING**

- **To help prevent accidents, always check for vehicles and pedestrians approaching from behind before opening the doors.**
- **Driving with a door ajar can be very dangerous. Make sure the doors are completely closed before starting.**
- **Exercise caution when opening a door in strong wind. Otherwise, the wind could catch the door and suddenly blow it open.**
- **Exercise caution when opening a door on a downward slope. Otherwise, the inclination of the vehicle could cause the door to suddenly fall open.**
- **When leaving the vehicle, take with you any children or pets who was riding in the cab. Never leave children or pets in the cab. A child left in the cab could interfere with the vehicle, causing it to move or catch fire. Also, the cab gets extremely hot in sunshine and in hot weather so a child left in the cab could suffer heatstroke.**
- **When closing a door, be careful not to trap your hand or anything else.**

*NOTE:*

- *Only open or close a door slowly without applying undue force; otherwise the door components could be damaged.*
- *Do not swing on or hang anything heavy on any of the doors. Doing so could damage the door components.*



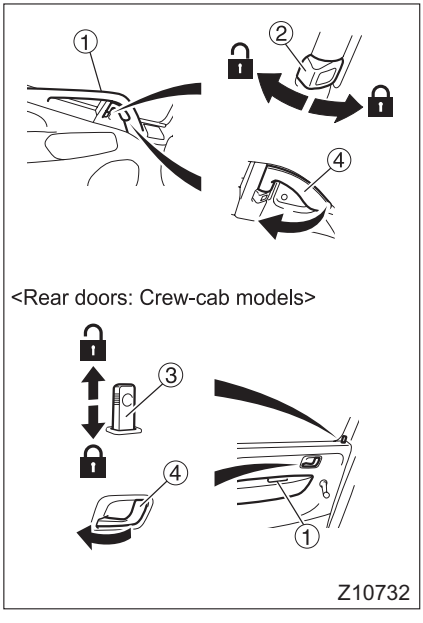




## 1 From the outside

- To open, pull the outer handle ① toward you.
- Use the starter key ② to lock or unlock the door.
- It is possible to lock each door without using the starter key. With the driver's door or assistant driver's door, push the lock knob ③ toward the front of the vehicle then pull the outer handle and keep it pulled as you close the door. With a rear door, push the lock knob ④ down then pull the outer handle and keep it pulled as you close the door.

*NOTE:*

- *If your vehicle is not a Crew-cab model vehicle, locking the driver's door using the starter key or lock knob also causes the assistant driver's door to automatically lock.*
  *On the other hand, unlocking the driver's door using the starter key or lock knob unlocks only the driver's door.*
- *When you leave your vehicle, be sure to remove the starter key from the starter switch to prevent theft.*
- *Be careful not to lock the doors with the starter key inside the vehicle.*

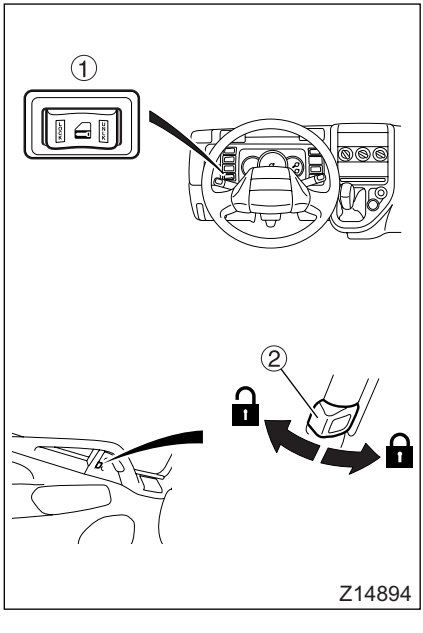



### 2 From the inside

- To close, use the door waist bar ①. Close the door completely.
- To lock the driver's door or assistant driver's door, push the lock knob ② toward the front of the vehicle. To lock a rear door, push the lock knob ③ down.
- To unlock and open the driver's door or assistant driver's door, push the lock knob toward the rear of the vehicle then pull the inner handle ④. To unlock and open a rear door, pull up the lock knob then pull the inner handle ④.

### ⚠ CAUTION

**Closing the door by pulling any part other than the door waist bar could damage the door mechanism.**




## Central door locks

<Vehicles other than Crew-cab models>

- When the "LOCK" side of the switch ① is pressed, both doors are locked. When the "UNLK" side of the switch is pressed, both doors are unlocked.
- When the lock knob ② on the driver's door is pushed forward, the passenger's door is also automatically locked. If the lock knob on either door is subsequently pushed rearward, only that door is unlocked.
- When the driver's door is locked from the outside using the starter key, the passenger's door is automatically also locked. If the starter key is subsequently used to unlock either door, the other door remains locked.

## Keyless entry system (OPT)

<Vehicles other than Crew-cab models>

**1 The Grant of Equipment Authorization certificate for wireless transmitter (remote control switch) RKE Transmitter MDL E11TG**

**TCB** **TCB**

**GRANT OF EQUIPMENT AUTHORIZATION**

**Certification**

**Issued Under the Authority of the**

**Federal Communications Commission**

**By:**

**Compliance Certification Services**
**564F Monterey Road**
**Morgan Hill, CA 95037**

**Date of Grant: 06/30/2006**

**Application Dated: 06/30/2006**

**Tokai Rika Co Ltd**
**Oguchi-Cho, Niwa-Gun**
**Aichi-Ken 480-01,**
**Japan**

**Attention: Reiko Kagimoto , General Manager**

**NOT TRANSFERABLE**

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

**FCC IDENTIFIER;** MOZEIITG
**Name of Grantee;** Tokai Rika Co Ltd
**Equipment Class;** Part 15 Security/Remote Control Transmitter
**Notes;** RKE Transmitter

| Grant Notes | FCC Rule Parts | Frequency Range (MHZ) | Output Watts | Frequency Tolerance | Emission Designator |
|---|---|---|---|---|---|
| | 15.231 | 312.15 - 312.15 | | | |

Z16853

1. FCC ID: MOZE11TG
2. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   - This device may not cause harmful interference.
   - This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## 2 The Grant of Equipment Authorization certificate for wireless receiver Tuner MDL E11UG

**TCB** **TCB**

**GRANT OF EQUIPMENT AUTHORIZATION**

**Certification**

**Issued Under the Authority of the**

**Federal Communications Commission**

**By:**

**Compliance Certification Services**
**564F Monterey Road**
**Morgan Hill, CA 95037**

**Date of Grant: 06/28/2006**

**Application Dated: 06/28/2006**

**Tokai Rika Co Ltd**
**Oguchi-Cho, Niwa-Gun**
**Aichi-Ken 480-01,**
**Japan**

**Attention: Reiko Kagimoto , General Manager**

**NOT TRANSFERABLE**

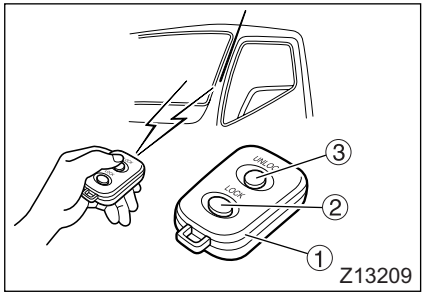
EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

**FCC IDENTIFIER;** MOZEIITG
**Name of Grantee;** Tokai Rika Co Ltd
**Equipment Class;** **Communications Receiver used w/Pt 15 Transmitter**
**Notes;** **Tuner**

| Grant Notes | FCC Rule Parts | Frequency Range (MHZ) | Output Watts | Frequency Tolerance | Emission Designator |
|---|---|---|---|---|---|
| | 15B | 312.15 - 312.15 | | | |

Z16854

1. FCC ID: MOZE11TG
2. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   - This device may not cause harmful interference.
   - This device must accept any interference received, including interference that may cause undesired operation:
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.




### 3 Keyless entry system

The keyless entry system allows you to lock/unlock the doors of the driver's seat and assistant driver's seat by operating the remote-control switch ①.

## ⚠ CAUTION

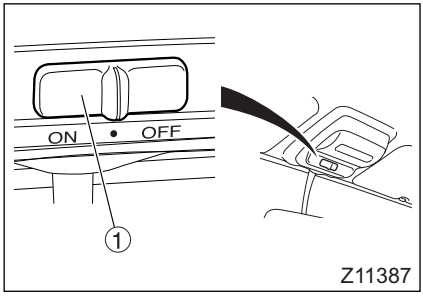
- **Do not expose the remote control switch to water, disassemble it, or apply shock by dropping it.**
- **Do not leave the remote control switch in a place that is exposed to direct sunlight or where the temperature rises to 60°C/140°F or above. Doing so will shorten the life or cause failure of the remote control switch.**
- **Do not remove the cover from the remote control switch unless you replace the battery. Removing it for no reason could lead to a remote control switch malfunction.**

### 4 How to operate the remote control switch

- Point the remote control switch toward the center of the cabin.
- Operate the remote control switch within 3 m (9.8 ft.) from the center of the cabin.
- Press the "LOCK" button ② to lock all doors.
- Press the "UNLOCK" button ③ once to unlock the driver's door. You can unlock the assistant driver's door if you press the "UNLOCK" button one more time within 3 seconds.

*NOTE:*
*The assistant driver's door does not unlock if you press the "UNLOCK" button ③ more than 3 seconds after unlocking the driver's door.*

- When you press the buttons, be sure to press them for at least one second. If a button does not work after one press, press the button again after one or two seconds.
- After locking the doors with the remote control switch, always check that the doors are locked by lifting the outside handle of a door.




- You can check the locking/unlocking of the doors by the flashing of the hazard lamps and the room lamp. Leave the switch of the room lamp ① "•" (in the center "•" position).
  When the doors are locked, the room lamp and the hazard lamps flash twice.
  When the doors are unlocked, the hazard lamps flash once and the room lamp lights up for about 10 seconds.
- If you do not open a door within 30 seconds after unlocking with the remote control switch, the doors will automatically be locked again.

*NOTE:*
- *The range in which you can operate the remote control varies somewhat depending on the surroundings, such as proximity to a TV tower, power station, broadcasting station, etc.*
- *If you lose the remote control switch or the switch does not work, please contact an authorized dealer to obtain a spare remote control switch.*

*The remote control switch does not work under the following conditions:*
- *A door is open or incompletely closed.*
- *When the starter key is in the "ON" position.*
- *While the engine is running.*

**5 Replacing the remote control switch battery**

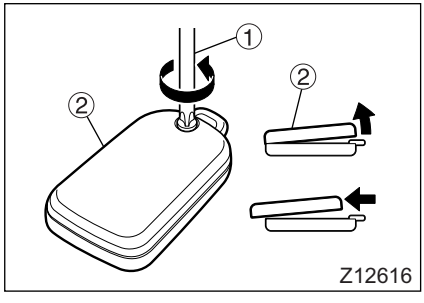
The battery may have run down if the remote control switch does not lock or unlock the doors upon pressing the corresponding button. Replacing the battery will solve the problem.

**⚠ WARNING**
- **Keep the batteries out of the reach of children. If a child swallows a battery, visit a doctor immediately.**
- **Do not disassemble, heat or drop the battery in water. Doing so could cause a fire or explosion.**

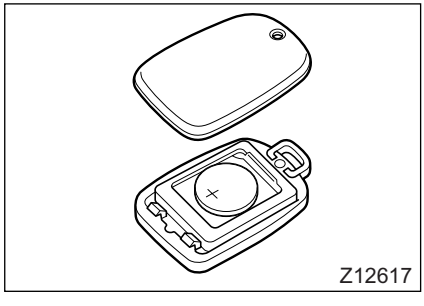
**⚠ CAUTION**
- **Use the designated standard type of battery. If the battery is replaced with an incorrect type, the battery could explode.**

| Designated Battery | Quantity |
|---|---|
| Lithium Battery CR1616 | 1 |

- **Attach the battery with the "+" mark facing upward.**
- **Do not use a metal tool such as tweezers to replace the battery. Doing so could cause a short circuit.**
- **Dispose of used batteries in accordance with local regulations. Inconsiderate disposal could adversely affect the environment. For disposal, wrap the battery with tape, vinyl sheet, etc. for insulation so that the battery cannot contact other metal objects or be exposed to water.**
- **Do not expose the inside of the remote control switch to water, and keep it away from dirt and dust. Otherwise, the switch could fail.**




1. Use a crosshead screwdriver ① to turn the screw and remove the cover ②.

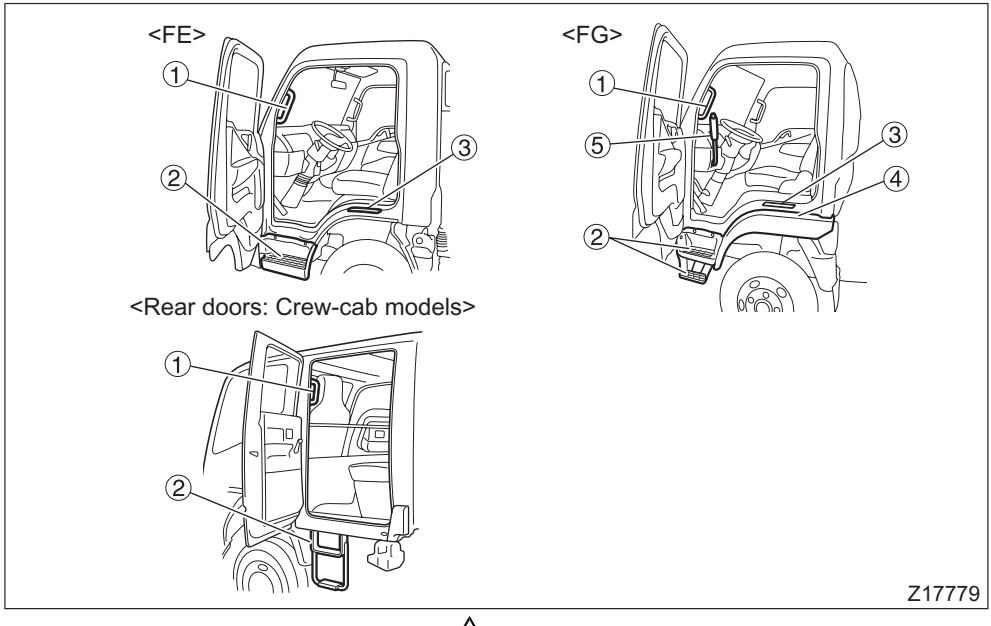



2. Place a new battery with the "+" mark facing upward.
3. Reattach the cover and the screw.
4. Operate the switch and check that the remote control works.

## Entering and leaving the vehicle

**⚠ WARNING**

- **Always use the step to climb into or down from the vehicle. Never put your foot on the wheel or tire since it could easily slip off.**
- **The step can become slippery in rain or snow. Firmly hold the grip while climbing into or down from the vehicle. Holding the grip is particularly important when snow has settled and frozen on the step.**
- **If the soles of your shoes are oily or greasy, you could slip when climbing down from the vehicle or when operating the brake or clutch pedal.**
  **Wipe any oil and grease off the soles of your shoes before entering or leaving the vehicle.**
- **When putting your foot on the step, make sure your body is supported in three places for safety.**
- **Do not hold luggage or other items in your hands when entering or leaving the vehicle since this can be dangerous.**
- **Do not jump down from the vehicle. Jumping down from the vehicle could cause you to fall or sustain an injury.**
- **Take care when entering or leaving the vehicle on a slope or in a strong wind since the door could open or close suddenly.**




## ⚠ CAUTION

- **Climb into and out of the cab by holding only the grip. For FG models, do not climb into and out of the cab by holding HIGH-LOW selector lever ⑤. If you hold onto any other parts of the vehicle, they could break or fail.**
- **When entering or leaving an FG model truck, do not place your feet or hands on the fender ④. The fender could suffer damage. Also, the fender can be dangerously slippery.**

Hold the grip ① tightly and put your foot fully on the step ② when entering or leaving the vehicle. If you place your hand on the fender, put it on the non-slip section ③.

## Door window glass

**⚠ WARNING**

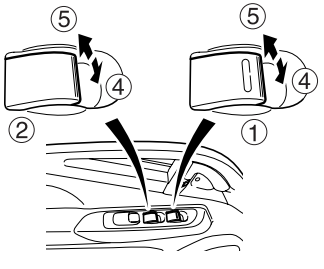
**Do not allow a child to put its hands or head out of a window. The child's head or hands could hit an object outside the vehicle, and the child could be seriously injured in the event of hard braking.**

### 1 Power window switches <Vehicles other than Crew-cab models>

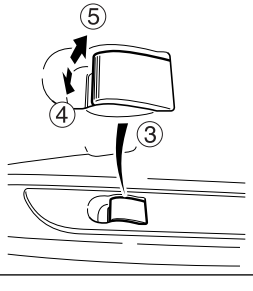
**⚠ WARNING**

- **Always make sure that no one has their head or hands out of the window when closing it. A body part could be injured if caught in a closing window.**
  **Never allow a child to open or close the window.**
- **When a child is in the cab, be sure to press the power window lock switch to prevent the child from opening and closing the assistant driver's window. Otherwise, the child may accidentally operate the power window switch and get its hands or head trapped.**

<Driver's door>




<Assistant driver's door>




Z10734

The power window switches function only when the starter switch is in the "ON" position.
On the driver's door, there are two switches: switch ① for controlling the driver's window and switch ② for controlling the assistant driver's window.

③ Switch for assistant driver's window.
④ Press the switch to open the window.
⑤ Raise the switch to close the window.

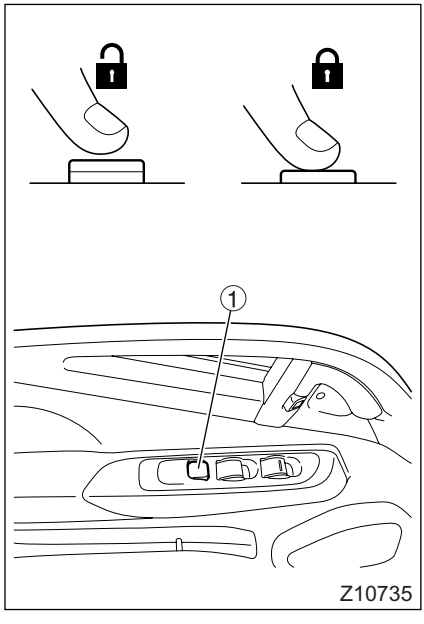
**⚠ CAUTION**

**Do not keep any door or window open in rainy weather, and be careful not to spill a drink on any of the window switches. If water or any other liquid gets on a window switch, it can cause a malfunction.**

### 2 Power window lock switch <Vehicles other than Crew-cab models>

**⚠ WARNING**

**When a child is in the cab, be sure to press the power window lock switch to prevent the child from opening and closing the assistant driver's window. Otherwise, the child may accidentally operate the power window switch and get its hands or head trapped.**

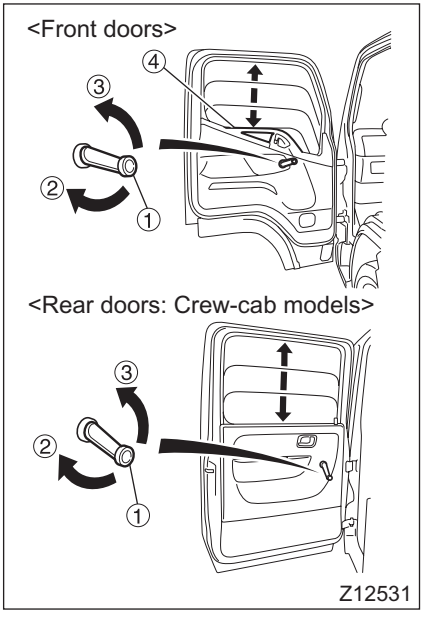



Press the power window lock switch ① to prevent the assistant driver's window from being opened or closed.
Pressing the switch a second time releases the lock.

**⚠ CAUTION**

**Do not keep any door or window open in rainy weather, and be careful not to spill a drink on any of the window switches. If water or any other liquid gets on a window switch, it can cause a fault.**

*NOTE:*
*If a child is in your vehicle, it is important for safety's sake to press the power window lock switch to prevent the child from opening or closing the assistant driver's window.*




### 3 Window regulator handle <Crew-cab models>

Turn the window regulator handle ① to open or close the window.
② Open
③ Close

## ⚠ CAUTION

**The front door window glass lowering limit is near the door waist bar ④. Trying to lower it further could damage the internal mechanism.**

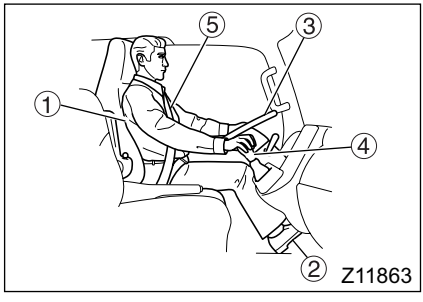
# 4. Seat and steering wheel adjustments

Seats ..... 4-2
Seat belts ..... 4-5
Steering wheel ..... 4-8

## Seats

**⚠ WARNING**

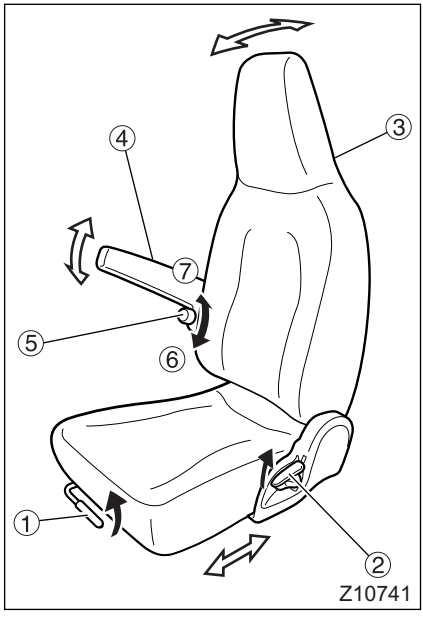
- **Adjusting the seat while the vehicle is in motion is dangerous as the seat may move more than you intend. Be sure to stop the vehicle and set the parking brake before performing any adjustment of the seat.**
- **After you have adjusted the seat, gently move or rock the seat to ensure that it is locked in the desired position.**
- **When adjusting the seat, keep your hands away from the bottom of the seat and from moving parts of the seat. Otherwise, you could suffer an injury by getting your hands and fingers trapped.**
- **When adjusting the angle of the seatback, keep your back or hand pressed against it. Otherwise, the seatback could suddenly return to its original position and injure you by hitting your face or other body parts.**




### 1 Driver's seat

#### 1.1 Correct driving position

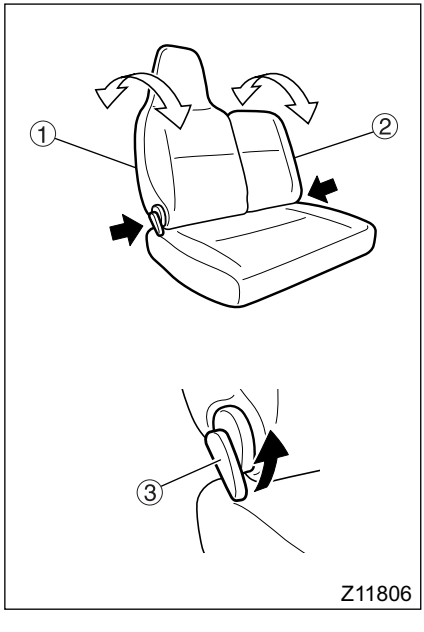
- Before driving the vehicle, adjust the seat with reference to the following points:
  - ① Your back must touch the seatback, and you must be able to see the warning lamps and gauges.
  - ② You must be able to reach and firmly press the pedals.
  - ③ You must be able to operate the steering wheel and switches with ease.
  - ④ You must be able to operate the shift lever with ease.
  - ⑤ You must be able to fasten the seat belt correctly.
- Adjust the steering wheel to a position at which you can operate it comfortably with your arms slightly bent.




### 1.2 Making adjustments

- Slide seat forward or backward while holding slide adjustment lever ① raised. After making the adjustment, release the lever and move the seat back and forth slightly to lock it in position.
- To adjust the angle of the seatback ③, raise reclining lever ②.
- Lower the armrest ④ to use it. Turn the armrest knob ⑤ to adjust the height of the armrest in its lowered position.

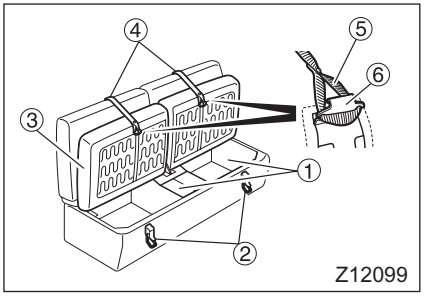
  ⑥ Up
  ⑦ Down




## 2 Assistant driver's seat

① Assistant driver's seat
② Center seat

- Pulling the seatback lever ③ allows the seatback angle to be adjusted. With the lever pulled, grasp the top of the seatback and move it forward or backward to adjust the seatback angle as desired.
  After adjusting the seatback angle or returning the seatback to its original position after tipping it forward, gently rock the seatback to make sure it is locked in place.
- It is possible to tip the seatback fully forward. With the lever pulled, grasp the seatback at the top and tip it forward.




## 3 Rear seat – Crew-cab models

Storage compartments ① are located under the rear seat. The rear seat can be folded up for access to them. When you wish to stow or remove something from these compartments, release the hooks ② at the base of the seat and raise the seat cushion ③. To retain the seat cushion, use the retaining bands ④ that are attached to the seatback. Fit the loop ⑤ at the end of each retaining band over the corresponding hook ⑥ on the seat cushion.

## Seat belts

- To help prevent injury in the event of a sudden stop or accident, the driver and all passengers must wear their seat belts correctly.
- When wearing your seat belt, sit back in your seat with your back straight. If a seat belt is used incorrectly, its effectiveness is greatly diminished and it could aggravate injuries in the event of accident.
- For details of seat belt usage for children and pregnant women, refer to “Children and babies” and to “Pregnant women”. ⇨ P. 4-7

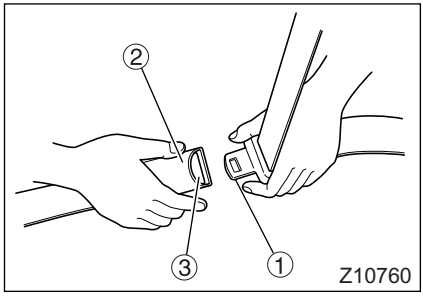
### ⚠ WARNING

- **Passengers must never be in the cargo area while the vehicle is in motion. Unless seated and properly belted up, the risk of injury is greatly increased.**
- **Seat belts should be worn as low as possible over the hips. Wearing a seat belt across the abdomen could be dangerous since undue pressure would be placed on internal organs in the event of a collision.**
- **Make sure that the seat belt is not twisted when fastening it. A twisted seat belt could be dangerous since its reduced width will apply a larger force to a smaller part of your body in the event of impact.**
- **Replace any seat belt that is cut or frayed, or if its buckle does not work properly.**
- **Never use a single seat belt for more than one person.**
- **It is dangerous to fasten or unfasten your seat belt while driving since the momentary diversion of your attention could lead to a serious accident. Always stop the vehicle first.**

- The left and right seats feature 3-point lap and shoulder belts with Emergency Locking Retractor (ELR), while the middle seat features a 2-point lap belt.

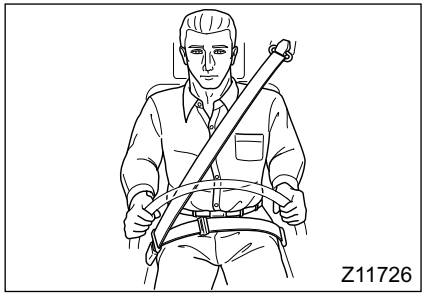
## 1 Lap and shoulder belts with ELR

*NOTE:*
*It is not necessary to adjust the length of these seat belts.*
*An ELR seat belt extends and retracts automatically as its wearer moves but locks automatically for protection in the event of a sudden stop or shock.*
*The belt's tightness should be adjusted automatically. If there is any looseness, lift the shoulder belt gently and the mechanism will take up the slack. With the belt properly tightened, the risk of it slipping off in a collision is reduced.*

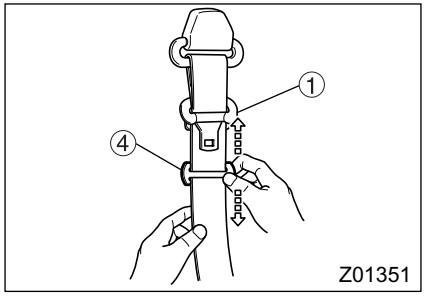



- **Fastening**

1. Hold tang ① and gently extend the belt. If the belt locks or is difficult to extend, let it retract and pull it gently again.
2. Take care that the belt does not become twisted. Insert the tang into the buckle ② until you hear a click.

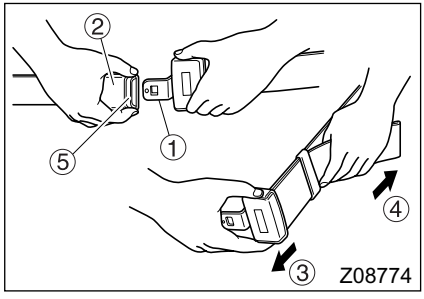



3. Pull on the tang to confirm that it is locked in.
4. Adjust the belt so it is across your hips and shoulder.




- **Unfastening**

1. Press the red button ③ to unlock the buckle.
2. The belt automatically retracts when unlocked. To prevent the tang causing damage or injury, hold it while the belt retracts.
3. Adjust the tang stopper ④ to locate the tang in an easy-to-reach position and prevent it from slipping.




## 2 Lap belt

- **Fastening**

1. Take care that the belt does not become twisted. Insert the tang ① into the buckle ② until you hear a click.
2. Pull on the tang to confirm that it is locked in.
3. Adjust the belt so it is low across your hips.
4. To adjust the belt's length, hold the tang at 90° to the belt.
   Pull the belt end to shorten the belt or the tang to lengthen it.

   ③ To lengthen
   ④ To shorten

**⚠ WARNING**

**For maximum protection in the event of an accident, the belt must not be loose. A loose belt could even aggravate injuries.**

- **Unfastening**

1. Press the red button ⑤ to unlock the buckle.
2. When the belt is not in use, insert its tang into the buckle.

## 3 Children and babies

- When carrying children or babies, they must be restrained properly to minimize the risk of injury in the event of a sudden stop or accident. Never allow children to stand or kneel on the seats. For maximum safety, we recommend fitting and using a restraint system that complies with Federal Motor Vehicle Safety Standards.
  The use of child and/or baby restraint systems is mandatory in some states. Please abide by your state's regulations.
- Older children may sit on the regular seats and use the regular seat belts. However, make sure that the shoulder belts do not cross their necks or faces.

## 4 Pregnant women

Since a seat belt could exert undue pressure on the abdomen in the event of an accident, pregnant women should consult a doctor about the use of seat belts before riding in the vehicle.
A pregnant woman should wear her seat belt as low as possible across the hips, not across her abdomen.

### 5 Seat belt care

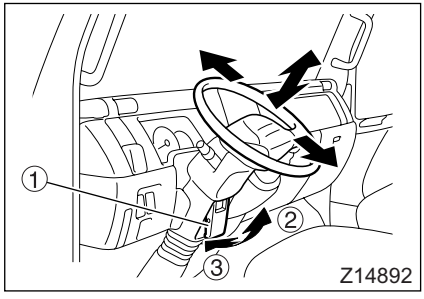
- Periodically, check the action of the mechanical parts such as the buckles, tangs, and emergency locking retractor (ELR) units. Check also for any damage that could stop the seat belts from functioning properly.
  Replace seat belt unit if there is any malfunction or damage.
- Replace any webbing that is cut, frayed, or otherwise damaged.
- Replace any seat belt that has received a shock due to a collision.
- Keep sharp or other potentially damaging objects away from the seat belts, especially the webbing.
- Keep the seat belts clean and dry. Use a mild soap and lukewarm water to clean seat belts. Such solvents as gasoline and thinner may seriously affect the strength of the webbing.
  ⇨ P. 12-89
- Never attempt to bleach or dye the seat belts, as this could weaken them considerably.
- Do not attempt to remove the seat belts or disassemble the ELR units.

## Steering wheel

**⚠ WARNING**

- **After every adjustment, try to move the steering wheel back and forth to make sure that it is securely locked. Unless the lever returns to its original position, the steering wheel may move while the vehicle is in motion and cause an accident.**
- **Make adjustments with the vehicle stationary. Adjusting the steering wheel while driving is dangerous since it could detract from your concentration or cause the steering wheel to move more than desired.**

The steering wheel can be adjusted to the preferred height and tilted forward/backward. Adjust the steering wheel as well as the seat to the best positions for easy safe driving.




- Pull the lock lever ① then adjust the steering wheel to the height and angle that are most comfortable for you.
- Push the lock lever back in to securely retain the steering wheel.

② Adjust
③ Retain

# 5. Switches and controls

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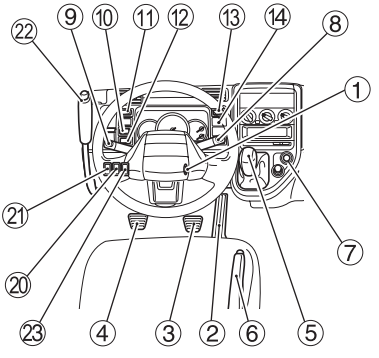
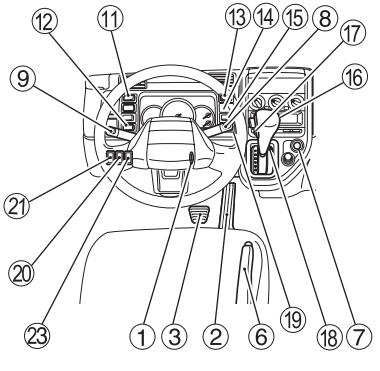
<Manual transmission vehicles>




Z17780

<Automatic transmission vehicles>




Z16856

## Arrangement of switches and controls

① Starter switch
② Accelerator pedal
③ Brake pedal
④ Clutch pedal <manual transmission vehicles>
⑤ Gearshift lever <manual transmission vehicles>
⑥ Parking brake lever
⑦ Hazard warning lamp switch
⑧ Combination switch
(wiper and washer switch, exhaust brake switch)
⑨ Combination switch
(lighting switch, passing/dimmer switch, turn signal switch)
⑩ Front drive switch <FG> ⇨ P. 8-3
⑪ DPF cleaning switch
⑫ Central door lock switch <vehicles other than Crew-cab models> ⇨ P. 3-4
⑬ Warm-up switch
⑭ Oil level check switch ⇨ P. 12-23
⑮ Cruise control main switch
<vehicles with cruise control>
⑯ Range selector lever
<automatic transmission vehicles>
⑰ Overdrive switch
<automatic transmission vehicles>
⑱ Shift lock release knob
<automatic transmission vehicles>
⑲ Cruise control SET/RESUME switch
<vehicles with cruise control>
⑳ Rheostat control switch
㉑ Van body dome light switch
<vehicles other than Crew-cab models>
㉒ HIGH-LOW selector lever <FG> ⇨ P. 8-4
㉓ Mirror heater switch <option>

## Starter switch

### ⚠ WARNING

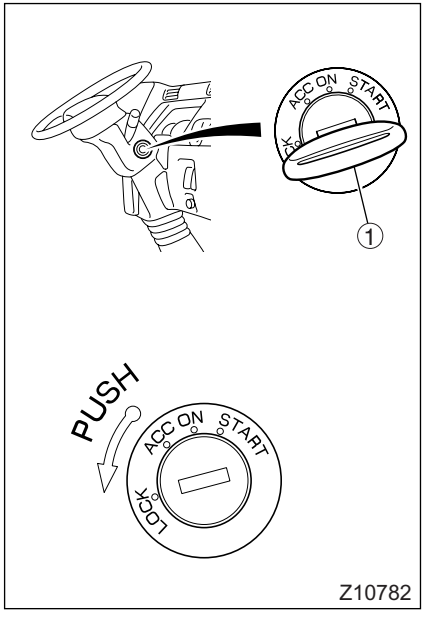
**Never turn the starter switch to any position other than the "ON" position while driving the vehicle. Turning the starter switch to the "ACC" position would be dangerous because the engine would stop and the following problems would occur:**

- **The braking force is severely reduced.**
- **The power steering system would stop working so the steering action would become extremely heavy.**
- **The electric circuits for the warning lamps and meters would stop working, and electric parts could fail.**

**When the starter key is removed from the starter switch, the steering wheel locks, making steering impossible.**

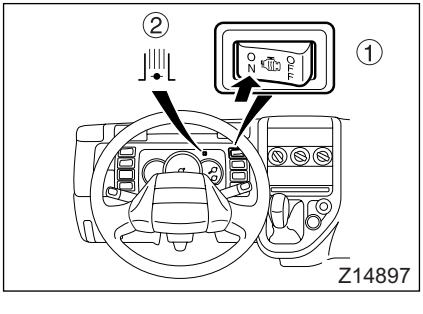
### ⚠ CAUTION

- **Do not turn the starter switch to the "START" position while the engine is running. Doing so could damage the starter.**
- **The starter key cannot be turned from the "ACC" position to the "LOCK" position unless it is pressed in. Do not attempt to turn it by force. Keep the key pressed in while turning it from the "ACC" position to the "LOCK" position.**
- **If you park the vehicle over an extended period of time, always place the key in the "LOCK" position and remove it from the starter switch. Leaving the key in the "ON" or "ACC" position could run down the battery.**
- **Avoid using the "ACC" position for long periods, for example, for listening to the radio, as the battery could be completely discharged.**




- LOCK
  The starter key ① can be inserted and removed in this position only. To place the key in the "LOCK" position, turn it to the "ACC" position then press it in. Keep it pressed in while turning it to the "LOCK" position. When the key is removed, the steering wheel locks.
  The lighting switch, rheostat control switch, hazard warning lamps, interior lamp, horn, central door locks and turn signal lamps can be used.
- ACC
  The engine is shut off or is not running in this position.
  The cigarette lighter can be used. Audio equipment (radio, etc.) installed and connected in the approved manner can also be used.
- ON
  The engine is running in this position.
  All electrical circuits are operable.
- START
  The engine is turned over and started in this position.
  Once the engine is running, release the key and the switch will automatically return to the "ON" position.

*NOTE:*
- *Turn the key only after inserting it fully in the starter switch.*
- *If you are unable to turn the key, gently turn the steering wheel clockwise and counterclockwise as you turn the key.*
- *The starter key on an automatic transmission vehicle can neither be turned to the "LOCK" position nor pulled out unless the range selector lever is in the "P" position.*




## Warm-up switch

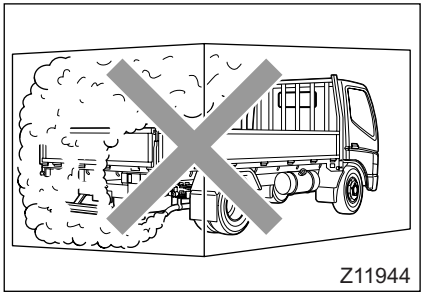
- To warm up the engine quickly or make the heater work more effectively with the vehicle stationary, turn ON the warm-up switch ①. The warm-up system will begin to operate, and the indicator lamp ② will illuminate.
  ⇨ P. 5-10
- When the engine has finished warming up, the warm-up system stops operating automatically.

- Once the engine has warmed up and/or the heater is working satisfactorily, turn OFF the switch.

*NOTE:*

- *When you start driving, be sure to turn OFF the switch to deactivate the warm-up system.*
- *The warm-up system is used to make the engine warm up more quickly and to make the heater work more effectively when the vehicle is stationary on cold days.*
  *When the warm-up system is turned ON, the engine's idling speed automatically increases and the exhaust brake operates. As a result, the coolant warms up more quickly.*

## Starting the engine


Z11944

**⚠ WARNING**

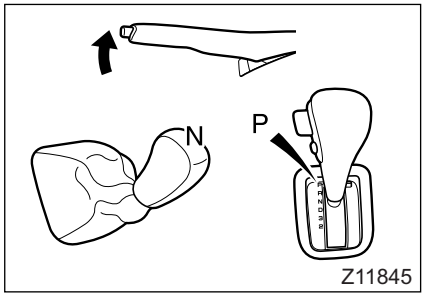
- **Do not start or warm up the engine in a garage or other closed area. When starting the engine or entering or leaving a garage, do not run the engine for longer than is necessary as the accumulation of exhaust gas in closed areas is very dangerous. Exhaust emissions contain carbon monoxide (CO), which if breathed can cause unconsciousness or death.**
- **If you smell exhaust gases inside the cab, inspect the exhaust pipe and check whether exhaust gases are leaking through holes or cracks caused by corrosion or damage. If exhaust gases are leaking, have the exhaust pipe inspected by an authorized dealer. If exhaust gases that have leaked from the exhaust pipe come into the cab, ventilate the cab with fresh air by opening the windows fully or by opening the doors.**
- **Make sure that there are no flammables under or behind the parked vehicle, especially close to the exhaust pipe. A fire could be started by the heat from the engine or exhaust pipe.**
- **When you start the engine, be sure to sit in the correct position on the driver's seat to wait for the engine to warm up. If you are leaning out of the door window or otherwise incorrectly seated and the vehicle suddenly moves, a serious accident could occur.**

**⚠ CAUTION**

- **It is dangerous to push-start the engine. Only push-start the engine when it is unavoidable. It is impossible to push-start an automatic transmission vehicle, and attempting to do so could damage the transmission.**
- **Do not use ether or other vapor compound type starting aids. Use of such fluid on this engine could result in serious damage.**

*NOTE:*

- *When the engine has started, allow it to warm up until the needle in the coolant temperature gauge starts to move.*
- *Do not continue operating the starter for more than 15 seconds as this could damage it or discharge the battery.*
- *If you operate the starter continuously for 10 seconds and the engine still does not start, turn the starter switch to the "ACC" position and wait about 30 seconds for the battery to recover before performing the starting procedure again.*
- *On a vehicle that has not been operated for a week or more, or after replacement of engine oil or engine oil filter element, be sure to crank the engine before starting it.* ⇨ P. 5-9
- *In a cold region, using a high-capacity battery improves engine startability.*



Z11845

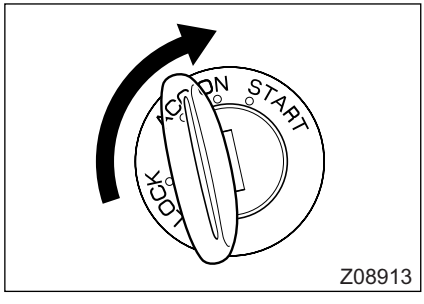
## 1 Pre-starting steps

1. Pull parking brake lever to fully apply the parking brake.
2. Manual transmission vehicles:
   Place gearshift lever in the neutral position.
   Automatic transmission vehicles:
   Place the range selector lever in the "P" position.

*NOTE:*

*For safety, the engine in a manual transmission vehicle cannot be started unless the gearshift lever is in the neutral position.*

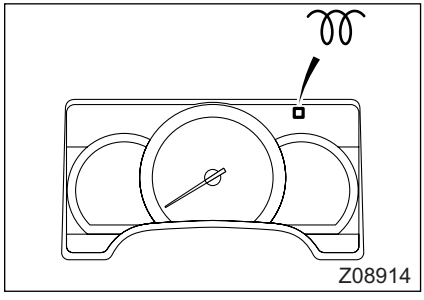
*In an automatic transmission vehicle, the engine cannot be started unless the range selector lever is in "P" or "N" position. It is safer to start the engine with the range selector lever in the "P" position. Start the engine with the range selector lever in the "N" position only when absolutely necessary, for example, if the engine stops while the vehicle is on a level crossing.*



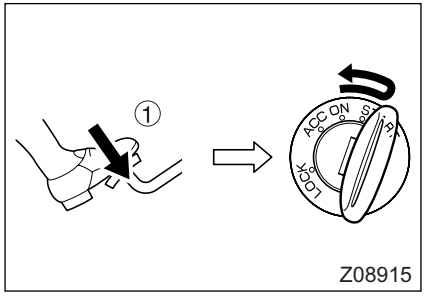
Z08913

## 2 Starting procedure

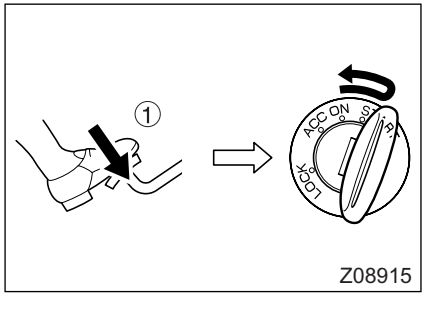
1. Turn the starter switch to the "ON" position.




2. Check whether the ⟒ indicator lamp illuminates or not.

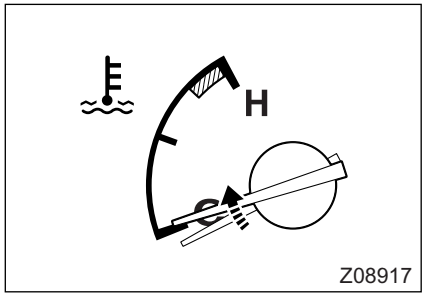



- **When the ⟒ indicator lamp does not illuminate**
  Automatic transmission vehicles: While holding down the brake pedal, turn the starter switch to the "START" position to start the engine.
  Manual transmission vehicles: While holding down the clutch pedal ①, turn the starter switch to the "START" position to start the engine.




- **When the ⟒ indicator lamp illuminates**
  Wait until the indicator lamp goes out;
  Automatic transmission vehicles: While holding down the brake pedal, turn the starter switch to the "START" position to start the engine.
  Manual transmission vehicles: While holding down the clutch pedal ①, turn the starter switch to the "START" position to start the engine.

*NOTE:*
*<FE84, FE85, FG>*
*If the engine is difficult to start after the ⟒ indicator lamp has gone out, the fuse of the preheating circuit may be blown out. Check the fuse if this happens.*
⇨ *P. 13-16*
*<FE83>*
*If the engine is difficult to start and the CHECK ENGINE lamp (amber) is illuminated, the preheating circuit is faulty.*
*Have the circuit repaired by the nearest authorized dealer.*




3. After the engine has started, let it warm up until the water temperature gauge needle begins to move. ⇨ P. 5-10

### 3 Starting the engine when vehicle has been parked over an extended period

When the vehicle is not used for a week or more or the engine oil and oil filter are replaced, the engine becomes starved of oil. Before the engine is started, therefore, it must be cranked in accordance with the following procedure to distribute oil to its various components.

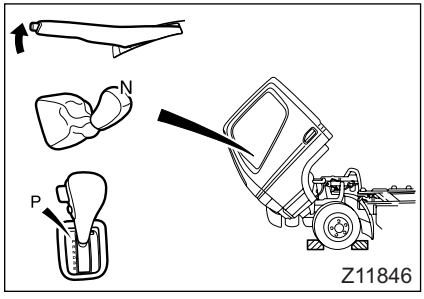
## ⚠ CAUTION

- **To ensure maximum safety, be sure to pull the parking brake lever fully to apply the parking brake and block the wheels with chocks thus preventing the vehicle from accidentally moving.**
- **Performing the cranking is of essential importance in terms of protecting the turbocharger.**

1. Pull the parking brake lever to fully apply the parking brake.
2. Manual transmission vehicles:
   Place gearshift lever in the neutral position.
   Automatic transmission vehicles:
   Place the range selector lever in the “P” position.
3. Without depressing the accelerator pedal, place the starter switch in the “START” position and crank the engine for roughly 15 seconds.
   If the engine starts, release the starter key and do not depress the accelerator pedal for roughly 15 seconds.

### 4 Starting the engine with the cab tilted

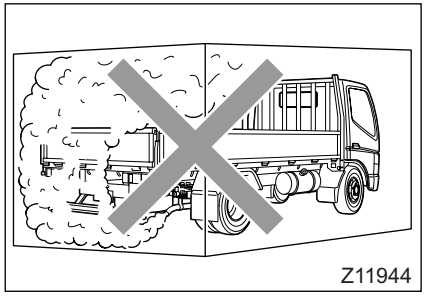
When you need to start the engine with the cab tilted for inspection or servicing purposes, be sure to observe the following safety precautions:




- Set the parking brake firmly and chock the wheels.
- With a manual transmission vehicle, make sure that the gearshift lever is in the neutral position. With an automatic transmission vehicle, make sure that the range selector lever is in the “P” position.
- Make sure nobody is near the engine compartment, then place the starter switch in the “START” position to start the engine.

## Warming up the engine

| Engine idling speed |
|---|
| 625 to 675 rpm |




**⚠ WARNING**

- **Do not warm up the engine in a garage or other closed area. When starting the engine or entering or leaving a garage, do not run the engine for longer than is necessary as the accumulation of exhaust gas in closed areas is very dangerous.**
  **Exhaust emissions contain carbon monoxide (CO), which if breathed can cause unconsciousness or death.**
- **If you smell exhaust gases inside the cab, inspect the exhaust pipe and check whether exhaust gases are leaking through holes or cracks caused by corrosion or damage. If exhaust gases are leaking, have the exhaust pipe inspected by an authorized dealer.**
  **If exhaust gases that have leaked from the exhaust pipe come into the cab, ventilate the cab with fresh air by opening the windows fully or by opening the doors.**
- **Make sure that there are no flammables under or behind the parked vehicle, especially close to the exhaust pipe. A fire could be started by the heat from the engine or exhaust pipe.**

## ⚠ CAUTION

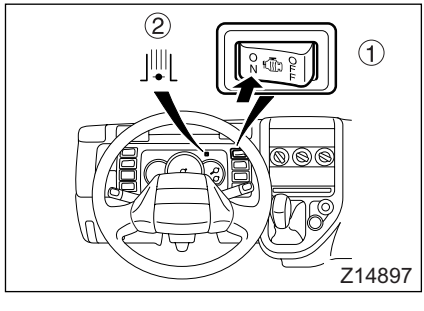
**Racing the engine immediately after it has started causes excessive wear of cylinders and pistons, leading to engine malfunction. Be sure to warm up the engine to operating temperature before full load operation according to the procedures described here.**

*NOTE:*
*Idling the engine for long time wastes fuel, and is therefore detrimental to environmental protection and resource conservation. So shut down the engine whenever you leave the vehicle, even for a short period.*
*If you start to drive immediately after starting the engine (while the engine is still cold), you will encounter the following problems:*

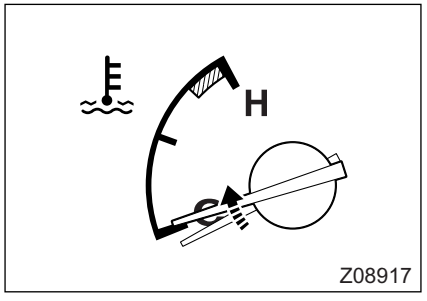
- *In a cold region, the extreme coldness of the engine will cause poor ignition of fuel, making the engine prone to knocking.*

You may encounter any or all of the following conditions. They are due to the actions particular to the oxidation catalyst inside the diesel particulate filter (DPF) and do not indicate any abnormalities.

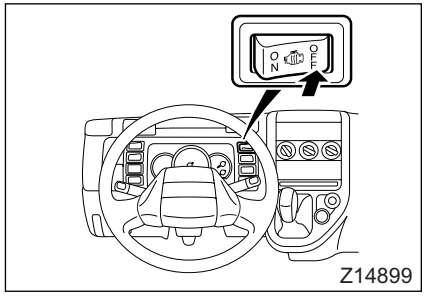
- White smoke from the exhaust pipe when setting the vehicle in motion after idling the engine for a relatively long-time or when accelerating the vehicle.
- White smoke from the exhaust pipe when the vehicle starts off immediately after the engine is started.
- The exhaust smells irritating (with a vinegar-like odor).




1. After the engine starts, turn ON the warm-up switch ①. The indicator lamp ② will illuminate and the exhaust brake will operate.




2. Continue to let the engine warm up until the water temperature gauge needle starts moving. When the coolant temperature rises sufficiently, the engine warming-up process stops automatically.




3. Turn OFF the warm-up switch.

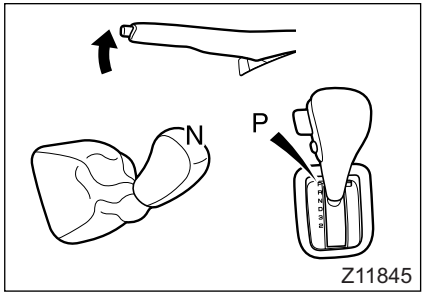
## Stopping the engine

**⚠ WARNING**

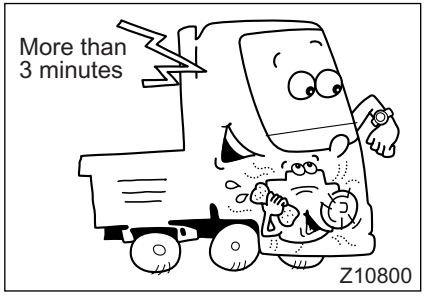
- **Never allow the vehicle to coast with the engine stopped as braking may be dangerously sluggish and extremely difficult steering may result. This may also cause trouble in the fuel injection system.**
- **The engine and exhaust pipe are extremely hot just after stopping the vehicle. Avoid parking the vehicle where the exhaust pipe could set fire to materials such as dry grass.**

**⚠ CAUTION**

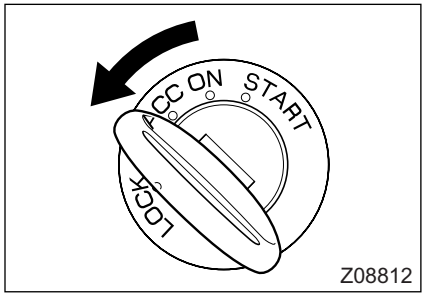
- **Allow the engine to idle for at least 3 minutes before stopping it. Not doing so could result in an engine malfunction.**
- **The engine should only be stopped from an idle. Stopping it at a high RPM could result in an engine malfunction.**




1. Hold down the brake pedal and apply the parking brake.
2. Manual transmission vehicles:
   Place gearshift lever in the neutral position.
   Automatic transmission vehicles:
   Place the range selector lever in the “P” position.

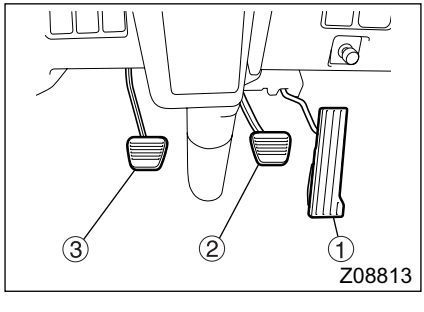



3. Allow the engine to idle for more than 3 minutes before stopping it.
   When the vehicle is in motion, engine parts become extremely hot. This is particularly true during uphill or high-speed driving. Therefore, let the engine cool down sufficiently by allowing it to idle for a time before stopping it.




4. Turn the starter switch to the “ACC” position to stop the engine.

## Pedals




① **Accelerator pedal**

**⚠ WARNING**

**If you use a floor mat, lay it correctly and make sure it is suitable for the size of the vehicle. It is dangerous for a floor mat to cover the accelerator pedal or for floor mats to be laid in multiple layers since the accelerator pedal may be prevented from returning when released.**

Racing the engine also increases fuel consumption.

② **Brake pedal**

**⚠ WARNING**

**Allowing empty beverage cans or other objects to get under the brake pedal is extremely dangerous as they will interfere with brake pedal movement. Keep the floor free of any objects obstructive to operation of the pedal.**

- Illumination of the DISC BRAKE warning lamp while the vehicle is being driven shows that the disc brake pads are due for replacement. Have the disc brake pads inspected by an authorized dealer.
  The DISC BRAKE warning lamp always illuminates when the starter switch is turned from the “ACC” position to the “ON” position. Provided it goes off approximately three seconds later, the disc brake pads are normal.
- Use the brake pedal correctly. ⇨ P. 7-8

③ **Clutch pedal**

<Manual transmission vehicles>

- Do not operate the vehicle with your foot on the clutch pedal as doing so can shorten the service life of the clutch. Driving with your foot on the clutch pedal could prevent engine braking and exhaust braking from taking place.
- Depress the clutch pedal fully when changing gear. If you do not depress the clutch pedal far enough, the clutch will slip, possibly damaging the clutch discs.

## Gearshift lever

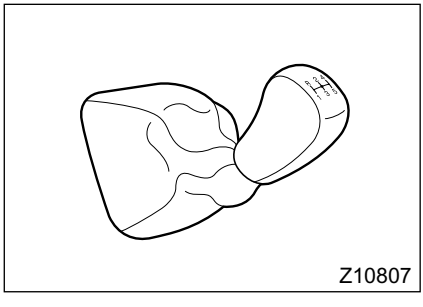
<Manual transmission vehicles>

**⚠ WARNING**

**When the gearshift lever is in the neutral position, never keep your hand on it. Such forward or backward pressure on the lever could cause the vehicle to move accidentally, possibly leading to an accident.**

## ⚠ CAUTION

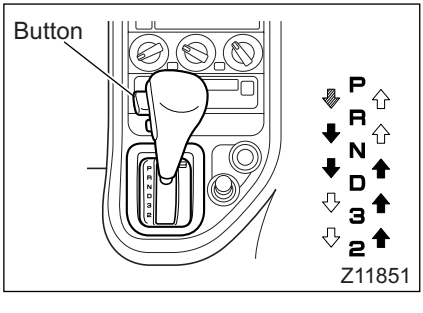
- **Shifting from a forward gear to the reverse gear or vice versa, should be done only after the vehicle has come to a complete stop. When backing up, always double check to make sure that there is nothing in your path.**
- **When the gearshift lever is in the neutral position, never keep your hand on it. Such forward or backward pressure on the lever could cause the transmission to malfunction, especially if you use a gearshift lever extender because the gearshift lever is very likely to move even if the pressure on the extender is slight.**
- **Depress the clutch pedal fully whenever changing gear. If you do not depress the pedal completely, the clutch will slip and the clutch disc will be damaged, which could lead to an accident.**


Z10807

- The shift pattern is inscribed on the top of gearshift lever.
- When the gearshift lever is placed in the reverse (R) position, the backup lamps light up and the backup buzzer sounds simultaneously.

## Range selector lever

<Automatic transmission vehicles>
The range selector lever is used to select gear ranges. Select lever positions carefully to ensure proper engagement of each gear.

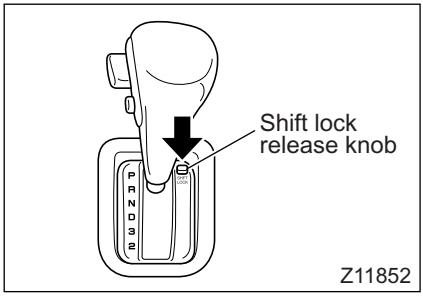



### 1 Using the range selector lever

⇛ : While depressing the brake pedal, push the button and move the range selector lever. The lever cannot be moved unless the starter switch is in the “ON” position.
⇨ : Push the button and move the lever.
➡ : Move the lever without pushing the button.

*NOTE:*

- *Never push the button for the range selector lever movements indicated by the black arrows ( ➡ ) in the illustration. With the button pressed, the lever could unexpectedly slip into the "P", "R", "3" or "2" position.*
- *For safety, the range selector lever cannot be moved out of the "P" position unless the brake pedal is depressed. Even with the brake pedal depressed, the range selector lever cannot be moved if the starter switch is in the "LOCK" position or "ACC" position.*



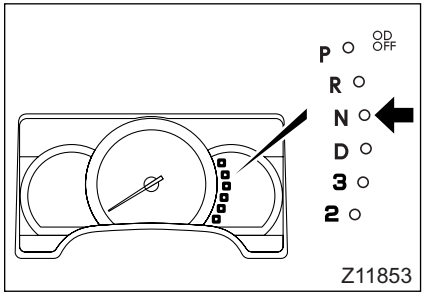

If the range selector lever cannot be moved out of the "P" position even with the starter switch in the "ON" position and the brake pedal depressed, move the range selector lever while pushing the shift lock release knob.
This problem can be caused by an electrical fault, so have an inspection carried out by an authorized dealer.

## 2 Ranges

P: Used when stationary, for example, when starting or warming up the engine. The starter key can be removed with the range selector lever in this position.
R: For backing up. The backup lamps illuminate, and a warning buzzer sounds.
N: The engine can be started with the lever in this position, but it is safer to use the "P" position.
D: For normal driving. With the overdrive switch in the "ON" position, gearshifts are made automatically using the 1st through 6th gears. With the overdrive switch in the "OFF" position, gearshifts are made automatically using the 1st through 4th gears.
3: Used when driving at low speeds or when powerful engine braking is needed on a downhill road. Gearshifts are made automatically between the 1st through 3rd gears.
2: For driving on steep hills and through mud and snow. This position provides the maximum engine braking. Gearshifts take place automatically using the 1st and 2nd gears.

## ⚠ CAUTION

**When driving downhill with the range selector lever in the "3" or "2" position, use the service brakes as necessary to prevent the acceptable engine revolutions being exceeded and the tachometer needle entering the red zone.**




For extra convenience, a shift indicator in the meter cluster shows the position of the range selector lever.

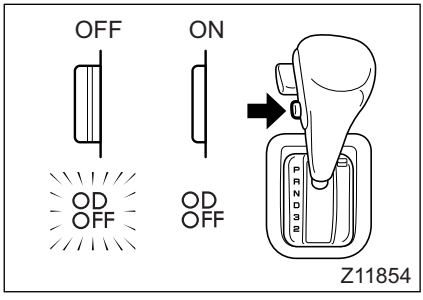
## ⚠ CAUTION

**Shifting from a forward gear to the reverse gear or vice versa, should be done only after the vehicle has come to a complete stop.**
**When backing up, always double check to make sure that there is nothing in your path.**

*NOTE:*
*When the weather is cold and the temperature of the transmission fluid is low, the transmission electronic control unit will modify normal shift pattern to facilitate warm up. The following conditions may occur as a result of this action. Note that this control will be terminated when the fluid reaches a suitable temperature.*

- *Difficulty may be experienced in making automatic gear changes.*
- *If the fluid temperature is extremely low, the transmission may remain fixed in 3rd gear when the gearshift level is in the "D", "3", or "2" position. Reverse will however be possible in the "R" position.*

*If the fluid temperature is high, control is implemented in order to protect the transmission, and this may make it impossible to shift to 5th or 6th gear. Once the temperature has dropped to a suitable level, full functionality of the 6-speed automatic transmission will be restored.*
*When travelling downhill, the incline and load conditions will be determined automatically, and where necessary, the transmission will be automatically shifted to the appropriate speed. As a result, downshifting will be easier to perform on steeper inclines and when carrying heavy loads.*




## Overdrive switch

<Automatic transmission vehicle>
Overdrive can be switched on and off with the switch located on the range selector lever.
When the switch is in the "OFF" position, an OD OFF indicator lamp illuminates.

- **Overdrive ON**

Overdrive should be switched on as desired for normal driving and always for high-speed driving. In the "D" range, gear shifts are made automatically between the 1st and 6th gears, and fuel consumption is minimized.
In cold weather, the transmission may not initially make automatic shifts to the 5th and 6th gears because of an excessively low fluid temperature. This condition is normal and will be resolved as the fluid temperature rises.

- **Overdrive OFF**

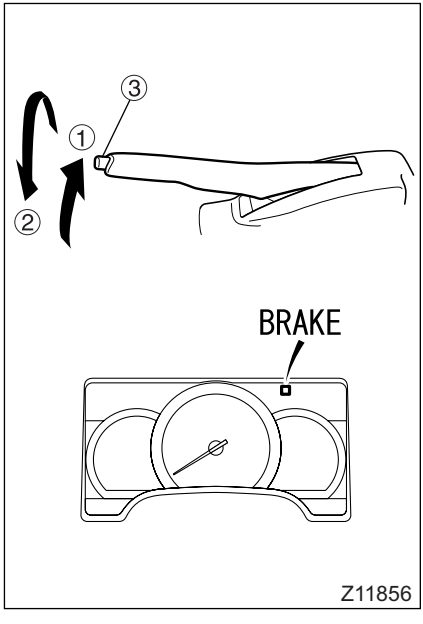
Overdrive should be switched off when engine braking is needed on a downhill road or when driving uphill for a long period. In the "D" range, gear shifts are made automatically between the 1st and 4th gears.

*NOTE:*
*Even with the overdrive switch in the "OFF" position, the 5th and 6th gears will automatically be selected if there is any risk of the engine overrevving.*

## Parking brake lever

**⚠ WARNING**

- **Do not use the parking brake when driving except in an emergency, like if the service brakes have failed. Such use of the parking brake may make the vehicle spin or, at worst, roll over. It may also cause faults in vehicle components.**
- **Illumination of the BRAKE warning lamp does not necessarily indicate that the parking brake has been fully activated. Be sure to pull the lever all the way.**



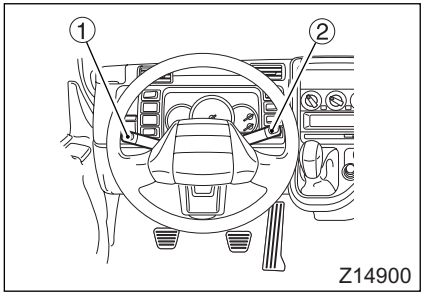

① **Parking**
The parking brake is activated when the parking brake lever is fully pulled out. The BRAKE warning lamp lights up simultaneously.

② **Releasing**
Raise the lever slightly, press the end button ③, and lower the lever with the button still pressed. Make sure that the BRAKE warning lamp goes out.

- When parking, please bear in mind the cautions in “Parking”, chapter 7. ⇨ P. 7-14

## ⚠ CAUTION

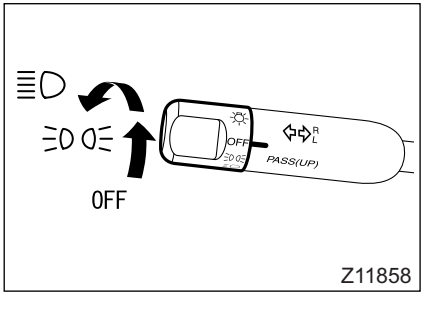
- **Before putting the vehicle in motion, completely release the parking brake lever and check that the BRAKE warning lamp is not illuminated. If you accidentally drove the vehicle with the parking brake applied, the parking brake would wear prematurely and overheat, leading to reduced effectiveness and the risk of a fire.**
- **When parking your vehicle on a slope, block the wheels with chocks for added safety.**




## Combination switch

### 1 Arrangement of switches

① Lighting switch
Passing/dimmer switch
Turn signal switch
② Exhaust brake switch
Wiper and washer switch




### 2 Lighting switch

## ⚠ CAUTION

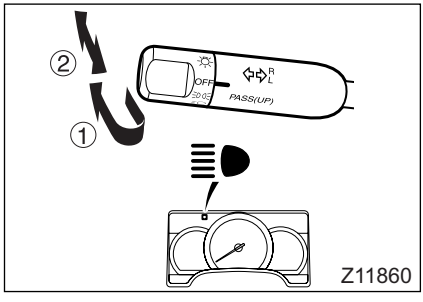
**Keeping the headlamps on for a long period without the engine running can drain the battery, making the engine impossible to start.**

The lighting switch can be used with the starter switch in any position.
Turning the knob at the end of the lever controls the illumination of lamps as follows:

| | Identification, clearance and side marker, parking, tail, license, and meter illumination lamps | Headlamps |
|---|---|---|
| OFF position | Off | On* |
| ≡D◐≡ position | On | On* |
| ≣D position | On | On |

*: Illuminated by daytime running light system

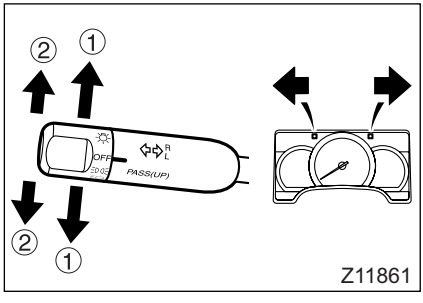
*NOTE:*
*Even when the vehicle is operated with the lighting switch in the "OFF" or ≡D◐≡ position, the daytime running light system causes the low-beam headlamps to be lit. (The headlamps are dimmer than when activated using the lighting switch.) The ≣D indicator lamp is also lit. When the parking brake is applied or the engine is stopped, the headlamps and the ≣D indicator lamp go off.*




## 3 Passing signal/dimmer switch

**① Passing signal**
Pulling the lever up activates the high beams until the lever is released. Use this to flash a signal when overtaking another vehicle.

**② Dimmer**
With the headlamps illuminated, pushing the lever down activates the headlamp high beams and pulling it back to the original position reactivates the low beams. When the high beams are on, indicator lamp ≣● lights up.




## 4 Turn signal lamp switch

**① Turn signal**
Moving the lever forward or backward activates the corresponding turn signal causing it to flash. At the same time, the corresponding indicator lamp ◀ or ▶ flashes.
When the steering wheel is returned to the neutral position after a right or left turn, the switch automatically moves back to the neutral position and the lamp stops flashing. After making a moderate turn, however, the switch will sometimes not return automatically. In this case, put the switch in the neutral position by hand.

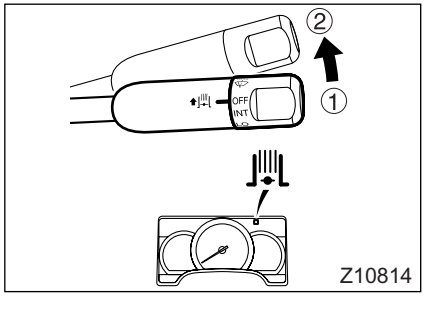
② **Lane changer**
Lightly pushing the lever forward or backward causes the corresponding turn signal lamp to flash while the lever is held in this position.

## 5 Exhaust brake

**⚠ WARNING**
**Using the exhaust brake on a wet, frozen, snow-covered, or otherwise slippery road surface when the vehicle is lightly loaded or not loaded can cause the tires to slip on the road surface, resulting in a skid. Do not use the exhaust brake on slippery road surfaces.**

The exhaust brake enhances engine braking. Use it as an auxiliary braking means on downhill stretches or during high-speed driving.

*NOTE:*
- *Do not keep the exhaust brake switch in the activation position at all times. Frequent use of the exhaust brake reduces fuel economy. Move the exhaust brake switch between the activation and non-activation positions as necessary according to road and traffic conditions.*
- *The exhaust brake is activated when the automatic DPF regeneration takes place during parking. The indicator, however, is not illuminated.*




- **Activation and deactivation of exhaust brake**

Pushing the lever forward activates the exhaust brake. While the exhaust brake is activated, the indicator lamp stays illuminated.

① Deactivated
② Activated

The exhaust brake will be temporarily disabled in the following conditions. Full functionality will be returned when the original conditions have been restored.
<Manual transmission vehicles>
- The accelerator pedal is depressed.
- The gearshift lever is positioned in neutral.
- The ABS is operating.

<Automatic transmission vehicles>
- The accelerator pedal is depressed.
- The gearshift lever is moved to “P” or “N”.

- The temperature of the transmission fluid is high.
- The vehicle speed has dropped to 10 km/h (6 mph) or lower.
- Gear shifting is being carried out.
- The ABS is operating.

*NOTE:*
*Do not place the range selector lever in the "P" position or "N" position while the vehicle is moving. Doing so could cause the transmission to fail.*

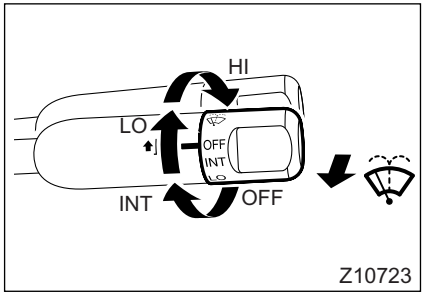
## 6 Wiper and washer switch

**⚠ WARNING**

**In cold weather, warm the windshield with the heater before operating the washer since washer fluid could otherwise freeze onto the windshield and obstruct your vision.**

**⚠ CAUTION**

- **Operating the wipers when the windshield is dry damages the windshield glass. If the glass is dry, be sure to squirt it with washer fluid before operating the wipers.**
- **Check nearby conditions before operating the washer switch. Washer fluid may splash around in some circumstances.**
- **Do not operate the wipers when the rubber parts of the wiper blades are frozen onto the windshield or otherwise stuck to the windshield. The wiper blades could get damaged, and the wiper motor could fail.**
- **When the wipers are not used for a long time, dust, sand, and other substances can collect between the wiper blades and windshield. Clean the wipers before using them. Otherwise, the windshield may get scratched.**
- **Operating the washer continuously for more than 20 seconds or when there is no fluid in the reservoir could burn out the washer motor.**




- Rotating the grip at the end of the lever activates the windshield wipers in one of the following three modes:

INT: Wipers operate intermittently at 3 to 5 second intervals.
LO: Wipers operate at a slow speed.
HI: Wipers operate at a rapid speed.

Replace the wiper blades if they start to work ineffectively. ⇨ P. 12-76

## ⚠ CAUTION

**Wiper blade rubber can deteriorate over time, causing the wipers to work ineffectively and possibly causing the windshield to be scratched.**

- To activate the windshield washer, pull the lever towards you.
- Refill the washer fluid reservoir before it is empty. ⇨ P. 12-77
- If there is washer fluid in the reservoir but none is sprayed when you operate the washer, the nozzles may be blocked. Clean the nozzles using a piece of thin wire. If fluid is still not sprayed when you operate the washer, have the vehicle inspected by an authorized dealer.

## Cruise control

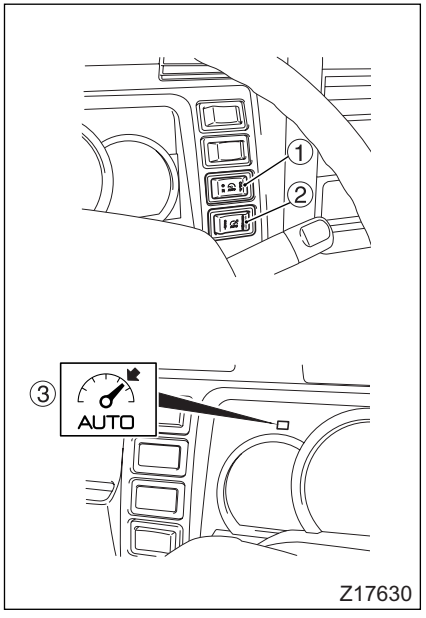
<Vehicles with cruise control>
Cruise control memorizes any desired speed above the speeds given below and maintains that speed automatically without operating the accelerator pedal. It is especially useful for freeway driving that involves almost no chances of pulling over and stopping.

| Speeds above which cruise control functions |
|---|
| Approx. 57 km/h (35 mph) |

*NOTE:*
*For the sake of safety, do not use the cruise control in the following driving conditions:*
- *In heavy traffic which does not allow sufficient vehicle to vehicle distance*
- *On roads with sharp turns or poor visibility*

- *On icy, snow-covered, or otherwise slippery roads*
- *Steep downhill road*

*The vehicle speed may become higher than the set speed on a steep downhill road. Stop using the cruise control if this occurs.*



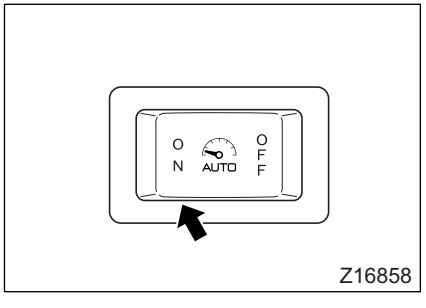

① **Main switch**
This switch is used to activate and deactivate the cruise control function. The lamp inside the switch illuminates when the cruise control is on. The switch returns automatically to the neutral position after having been pressed.

**⚠ WARNING**
**For safety, turn off the main switch when the cruise control is not in use.**

② **SET/RESUME switch**
SET:
Press this side of the switch to set a desired speed and to reduce the set speed as well. The switch returns automatically to the neutral position after having been pressed.
RESUME:
Press this side of the switch to change the set speed to a higher speed and to return to the previously set speed as well. The switch returns automatically to the neutral position after having been pressed.

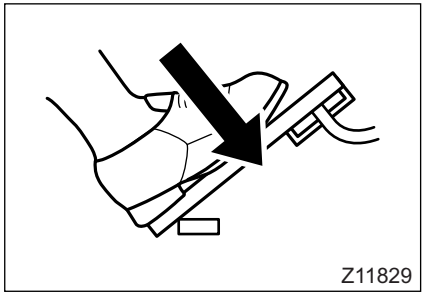
③ **Cruise control indicator lamp**
If the cruise control is activated, this lamp illuminates during driving.

*NOTE:*
*The AUTO indicator lamp will light up when the starter switch is turned to the ON position and the engine is not running. It will go out in a few seconds if there are no problems.*




## 1 To set a desired speed

1. Check that the exhaust brake switch is in the OFF position. If the switch is in the ON position, place it in the OFF position.
   Press the ON side of the cruise control main switch. The lamp inside the switch will illuminate.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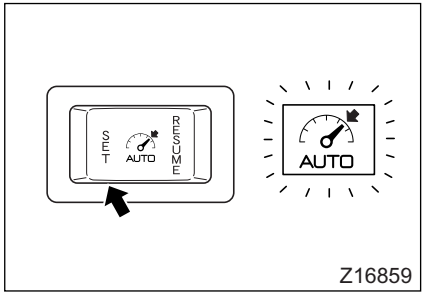
2. Depress the accelerator pedal until the desired speed is reached.



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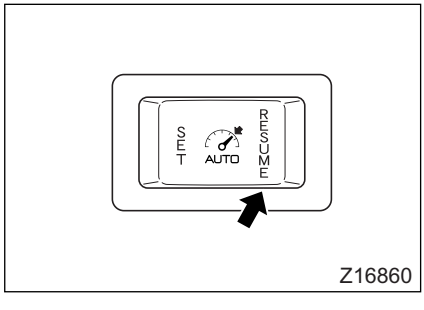
3. When the desired speed is reached, press the SET side of the SET/RESUME switch. The AUTO indicator lamp will illuminate indicating that the cruise control is activated. Now the desired speed is memorized, so release the accelerator pedal. The vehicle will run maintaining that speed automatically.

*NOTE:*

- *The selector lever must be in the "D" position when setting the desired speed.*
- *Before pressing the ON side of the main switch to set a desired speed, make sure the exhaust brake switch is in the OFF position. You will not be able to set the speed if the exhaust brake switch is in the ON position. When driving with the cruise control active, exhaust braking can be used as usual, but the cruise control function will be deactivated while exhaust braking is being used.*



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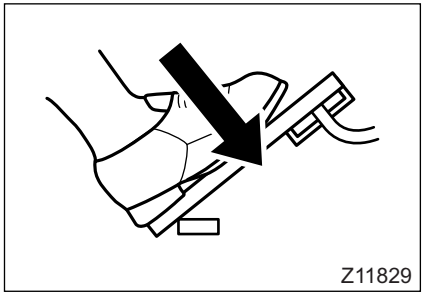
## 2 To increase the set speed in cruise control mode

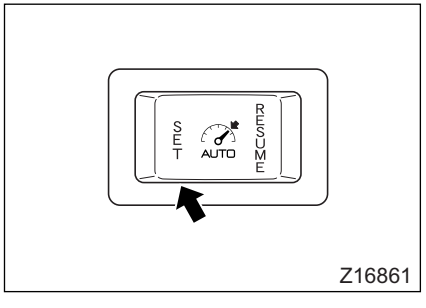
- **By using the SET/RESUME switch**

Continue to press the "RESUME" side of the SET/RESUME switch. The vehicle will accelerate. Release the switch when the desired speed is reached. The vehicle will cruise at the new, higher speed.


Z11829

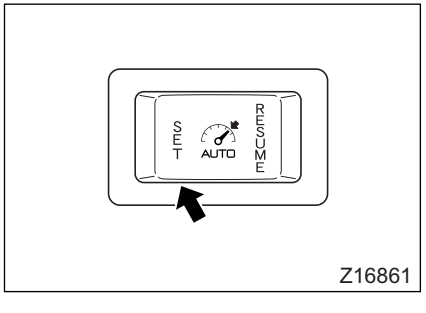
- **By using both accelerator pedal and SET/ RESUME switch**

1. Use the accelerator pedal to reach the desired speed.



Z16861

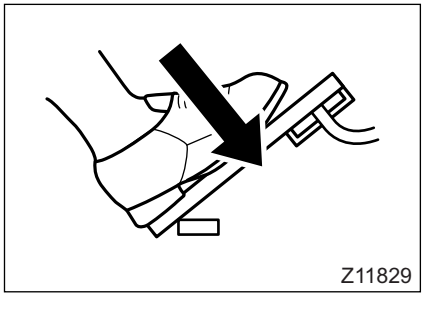
2. When the desired speed is reached, press the “SET” side of the SET/RESUME switch. The vehicle will cruise at the new, higher speed.



Z16861

### 3 To decrease the set speed in cruise control mode

Continue to press the “SET” side of the SET/ RESUME switch. The vehicle will decelerate. Release the switch when the desired speed is reached. The vehicle will cruise at the new, lower speed.


Z11829

### 4 To accelerate temporarily in cruise control mode

Depress the accelerator pedal as you do in normal accelerating. When the pedal is released, the vehicle will cruise at the set speed again.

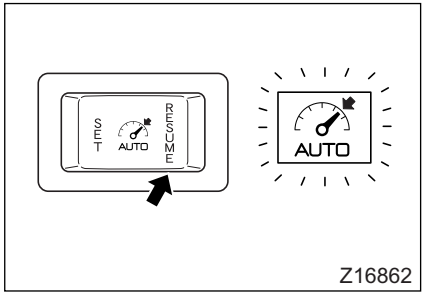
### 5 Automatic deactivation of the cruise control

The cruise control is deactivated automatically and the AUTO indicator lamp also goes out in the following conditions:

- When the brake pedal is depressed
- When the exhaust brake is activated
- When the selector lever is placed in the “N” position

## ⚠ CAUTION

**Placing the range selector lever in the “N” position temporarily deactivates the cruise control. However, such practice is dangerous during driving because engine braking will no longer be possible. It will also cause malfunction of the automatic transmission.**



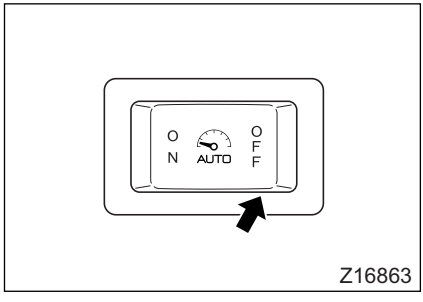
Z16862

### 6 To reactivate the temporarily deactivated cruise control

- To reactivate the cruise control, press the “RESUME” side of the SET/RESUME switch. The AUTO indicator lamp will illuminate again and the vehicle will resume running at the set speed.
- To reactivate the cruise control while altering the set speed to a new speed, press the “SET” side of the SET/RESUME switch when the vehicle has reached the desired speed. The AUTO indicator lamp will light up, and the vehicle will continue running at the set speed.

*NOTE:*
*Under any of the following conditions, you cannot resume the set speed by performing the above operation. In these situations, perform the speed setting procedure from the beginning.*

- *The vehicle speed is lower than 30 km/h (18 mph).*



Z16863

### 7 To deactivate the cruise control

Press the OFF side of the main switch.

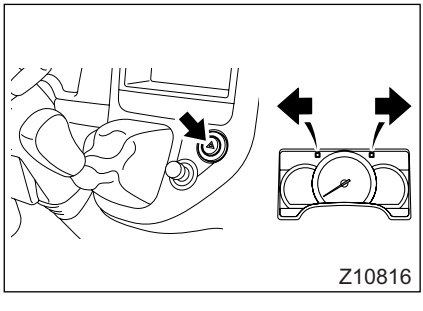
## ⚠ CAUTION

- **Consult an authorized dealer if you wish to install a radio transmitter/receiver equipment. Proper operation of the cruise control cannot be ensured if this equipment is installed in an inappropriate location or is incorrectly adjusted.**
- **If the CHECK ENGINE (red) or MVCU warning lamp illuminates, turn off the cruise control main switch and have the vehicle inspected by an authorized dealer.**
- **When there is a problem with the engine control system, the cruise control cannot be used.**

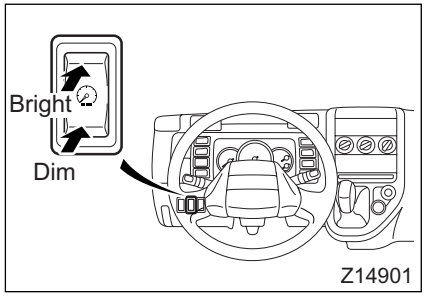
## Hazard warning lamp switch

## ⚠ CAUTION

**The battery may be discharged and the engine impossible to restart if the hazard warning lamps are operated for an extended period of time.**


Z10816

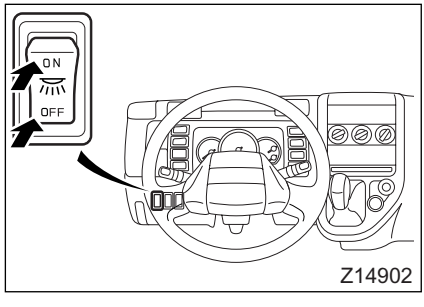
The hazard warning lamps may be used as a warning to other vehicles when you suddenly find it necessary to stop your vehicle in emergencies.
The lamps can flash in any of the starter switch positions.
Pressing switch causes all turn signal lamps to flash simultaneously. At the same time, indicator lamps ⇔ start flashing.
Pressing the switch again causes the lamps to go out.




## Rheostat control switch

Use the rheostat control switch to adjust the brightness of the meter cluster illumination lamps.
With the meter cluster lamps on, press and hold either side of the switch to set the lamps to your desired brightness, then release the switch.

*NOTE:*
*The lamps can be brightened and dimmed only within a fixed range. Pressing the rheostat control switch after the lamps have brightened or dimmed to the limit will have no effect.*

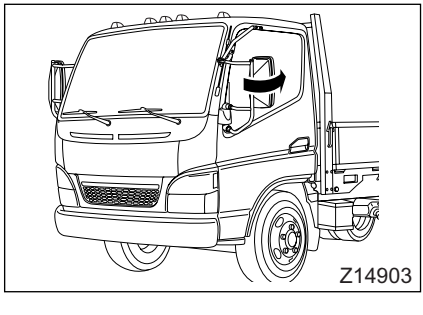



## Van body dome light switch

<Vehicles other than Crew-cab models>
This switch operates the lighting inside the van body. With the starter switch in the “ON” position, operate the van body dome light switch to turn the van body interior lighting on or off. An indicator light comes on in the switch when it is in the “ON” position.

### ⚠ CAUTION

**Leaving the van body interior lighting on for an extended period without the engine running can drain the battery.**

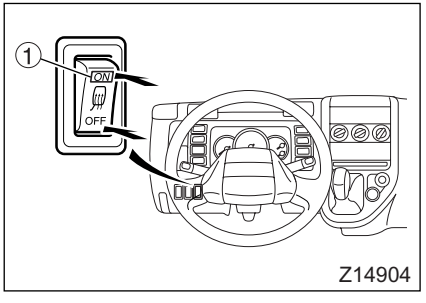



## Rearview mirrors

The mirror stay can be swung manually in the direction indicated by the arrow.
Swing the stay to the inward position if the mirror is obstructing free movement of the vehicle, for example, when turning a tight corner, passing an oncoming vehicle or parking in a narrow place.

**⚠ WARNING**

- **During normal driving, the mirrors must be in their outward positions and adjusted so that clear rear views may be obtained through them.**
- **When turning right or left, bear in mind the difference in tracking of the front and rear inner wheels, and use the rearview mirrors to confirm safety behind you.**
- **Pay attention to the extended rearview mirrors when driving on narrow roads. Take particular care to ensure that they do not hit pedestrians.**
- **If rainy weather, drops of water can adhere to the mirrors, detracting from rearward visibility.**
  **Stop the vehicle and wipe off the water to restore visibility.**

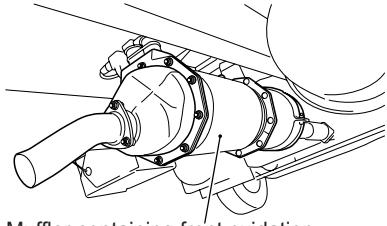



## Mirror heater switch OPT

When the mirrors are misted up, turn ON the switch to activate the mirror heaters. The lamp ① in the switch will illuminate at this time. Turn OFF the switch when the mirrors are clear.

**⚠ CAUTION**

**Do not use the mirror heaters unless the engine is running. Otherwise, the battery may become drained, making it impossible to start the engine.**



Muffler containing front oxidation catalyst and ceramic filter (with built-in rear oxidation catalyst) Z17167

## DPF cleaning switch

DPF is short for “diesel particulate filter”. The DPF system is essentially formed of a ceramic filter and an oxidation catalyst. The ceramic filter collects small particles (particulate matter or PM) contained in diesel engine exhaust, while the catalyst works to continuously regenerate the ceramic filter (or remove the PM trapped by the filter by oxidation).

- The regeneration controlling DPF system on your vehicle can maintain its full PM removing capability thanks to an automatic computer control it employs to actively regenerate the filter (or remove the collected PM by oxidation) and thus prevent an overfilled ceramic filter under low-speed driving or similar conditions when continuous filter regeneration is impossible (this is called “automatic DPF regeneration”). However, the automatic DPF regeneration cannot work in such cases as extremely slow driving and frequently repeated engine start and shutdown. If the DPF is loaded with PM to its maximum capacity following these types of driving, you must manually regenerate it after bringing the vehicle to a stop (this is called “manual DPF regeneration”). The following table shows when the system continuously or automatically regenerates the DPF and when you must manually regenerate the DPF or have the system inspected by an authorized dealer.

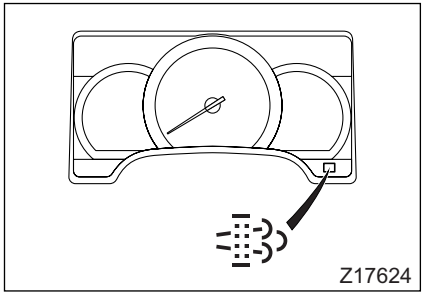
| PM accumulation | Vehicle condition | DPF regeneration/inspection | Ref. page |
|---|---|---|---|
| Small ↓ Large | Normal speed driving ↓ | During high-speed or high-load driving, filter trapped PM is removed continuously by oxidation (continuous regeneration). | |
| | Automatic DPF regeneration ↓ | When PM accumulates to a predetermined amount, it is actively removed by oxidation (automatic regeneration). | 5-32 |
| | The indicator lamp flashes (frequency varies with degree of PM accumulation) ↓ | You must bring the vehicle to a stop and perform the appropriate procedure to clean out DPF (manual regeneration). | 5-32 |
| | Red CHECK ENGINE warning lamp illuminates | The engine output is automatically limited. Have your vehicle inspected by an authorized dealer. | 5-35 |

## 1 Automatic DPF regeneration

The system actively removes PM by oxidation to prevent an overfilled DPF under automatic control. The operating sound and idling speed of the engine will change but you can drive the vehicle in its normal manner.

*NOTE:*

- *During the automatic DPF regeneration, there may be a change in engine operating sound and, when your vehicle is in park, a rise in idling speed (to approx. 750 rpm) accompanied by exhaust brake valve operation. These do not indicate any abnormalities.*
- *Exhaust temperature is higher when the automatic DPF regeneration is taking place.*


Z17624

## 2 Manual DPF regeneration (performed following illumination of the indicator lamp)

The system sometimes cannot automatically remove the DPF trapped PM by oxidation, typically when you drive the vehicle at very low speeds or start and stop the engine frequently during operation. The system informs you of such a condition by flashing the indicator lamp to prompt you to manually remove the DPF trapped PM by oxidation. The flashing interval of the indicator lamp differs depending on the amount of the PM accumulated in the DPF as follows:

- Slow flashing (1-second interval)
  You must use the DPF cleaning switch within 50 km/31 miles of driving after the start of the flashing of the indicator lamp to perform the manual DPF regeneration in order to remove the PM inside the DPF by oxidation.
- Fast flashing (0.3-second interval)
  You must bring the vehicle to a stop in a safe place as soon as possible, then use the DPF cleaning switch to perform the manual DPF regeneration in order to remove the PM inside the DPF by oxidation.

*NOTE:*
*If prompted by a fast flashing of the indicator lamp for PM removal from the DPF, you must perform the manual DPF regeneration without any delay. Continuing to drive with an overfilled DPF will result in system failure.*

### 3 How to perform the manual DPF regeneration

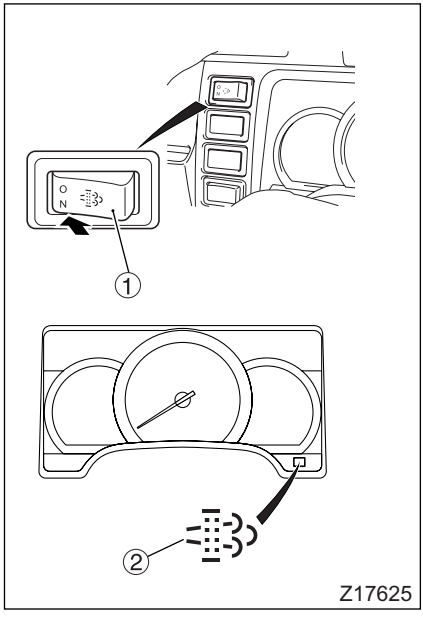
The manual DPF regeneration steps you should follow upon flashing of the indicator lamp are indicated below. You may perform the manual DPF regeneration only when the indicator lamp flashes. The manual DPF regeneration time is as a general rule 10 to 30 minutes although it varies with the conditions in which the vehicle is operated.

**⚠ WARNING**

**Do not perform the manual DPF regeneration in a poorly ventilated garage or other closed area. Exhaust gas contains carbon monoxide, which is toxic and very dangerous.**

**⚠ CAUTION**

**Do not perform the manual DPF regeneration in a place where there are flammable materials, such as dead grass or paper. During the manual DPF regeneration, all surfaces of and around the exhaust pipe and muffler as well as the exhaust gases are extremely hot and nearby flammable materials can catch fire easily. Also, keep all people away from the exhaust pipe and muffler. Should anyone touch the exhaust pipe, muffler or other hot surfaces or expose any part of his/her body the exhaust gases, he/she could get burned.**

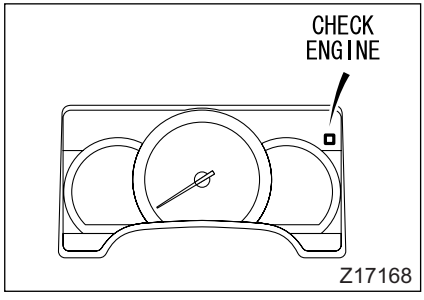



1. Park the vehicle in a safe place and warm up the engine.
2. Firmly set the parking brake and place the gear-shift lever in the neutral position if your vehicle is equipped with a manual transmission, or place the selector lever in the “P” position if your vehicle is equipped with an automatic transmission. Wait 20 seconds. Do not depress the accelerator pedal. If you are in a manual transmission vehicle, depress neither the accelerator pedal nor the clutch pedal.
3. With the engine still in operation, continuously press the “ON” side of the DPF cleaning switch ① until the indicator lamp ② stops flashing and shifts to continuous illumination. The engine will increase its idling speed (to approx. 1500 rpm) to start the manual DPF regeneration. The exhaust brake valve may also operate during the manual DPF regeneration.

*NOTE:*
*The manual DPF regeneration sequence does not start under the following conditions:*
- *The engine coolant temperature is too low. (Then the engine must be warmed up.)*
- *The accelerator pedal or clutch pedal (manual transmission vehicle) is depressed.*
- *The parking brake is released.*

4. The idling speed of the engine returns to the original idling speed (approx. 650 rpm) and the indicator lamp ② goes out. This indicates completion of the manual DPF regeneration.
5. Once the manual DPF regeneration is completed, you may drive the vehicle normally.
6. If you need to suspend the manual DPF regeneration before completion of the sequence, repress the “ON” side of the DPF cleaning switch or depress the accelerator pedal or clutch pedal (manual transmission vehicle).

*NOTE:*
*When you deliberately suspend the manual DPF regeneration, complete the remaining part of the sequence without delay by performing the above steps again.*



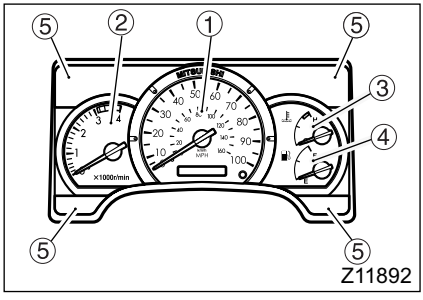

### 4 If the red CHECK ENGINE warning lamp is illuminated

The red CHECK ENGINE warning lamp will be illuminated if you continue to drive with the indicator lamp quickly flashing. An red color CHECK ENGINE warning lamp that remains illuminated while driving probably indicates a blocked DPF and/or failure of the system. Park the vehicle in a safe place as soon as possible and proceed to the following.

1. Hold the starter switch in the “ACC” or “LOCK” position for more than 3 minutes, then restart the engine.
2. If the warning lamp goes out, there is nothing abnormal with the system.
3. If the warning lamp remains illuminated, have an authorized dealer perform the necessary inspection.

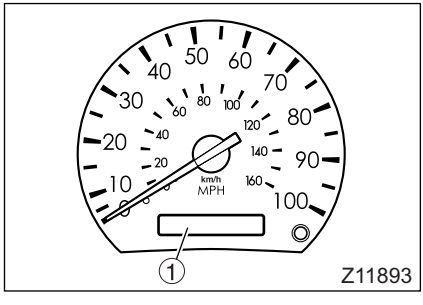
# 6. Instruments and warning lamps

Arrangement of instruments and warning lamps ..... 6-2
Speedometer ..... 6-2
Tachometer ..... 6-3
Water temperature gauge ..... 6-3
Fuel gauge ..... 6-4
Warning/indicator lamps ..... 6-5




## Arrangement of instruments and warning lamps

① Speedometer
② Tachometer
③ Water temperature gauge
④ Fuel gauge
⑤ Warning/indicator lamps

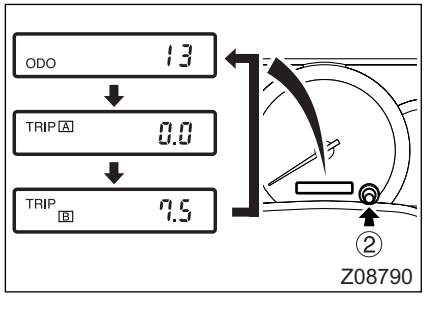



## Speedometer

### 1 Speedometer

The speedometer indicates vehicle speed in miles or kilometers per hour.

① Odometer/Tripmeter




### 2 Odometer/tripmeter

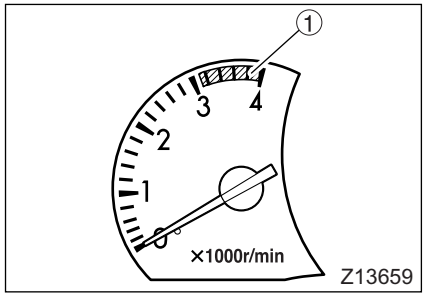
With the starter switch in the “ON” position, either “ODO” (for “odometer”) or “TRIP” (for “tripmeter”) is displayed. The display toggles between “ODO” and “TRIP” each time the trip knob ② pressed.

- **ODO (odometer)**

The total distance covered by the vehicle is shown to the nearest mile.

- **TRIP (tripmeter)**

The distance covered by the vehicle from a selected point to its present location is shown to the nearest 0.1 mile.
The tripmeter has two indications: TRIP “A” and TRIP “B”, which can be set and displayed independently of each other.
To zero the current indication, press the trip knob for approximately 1 second or longer. The indication will return to “0.0”.



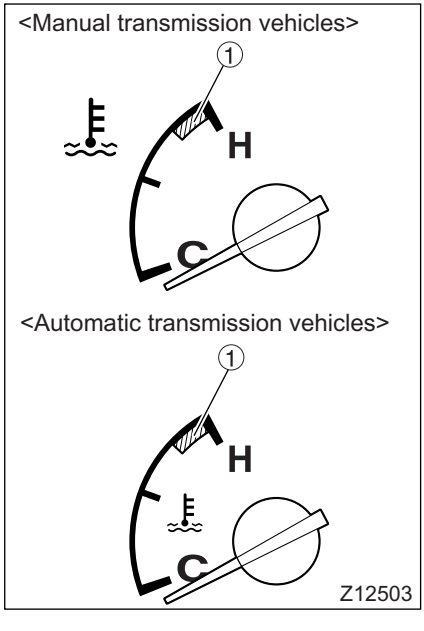

## Tachometer

- The tachometer indicates engine speed in revolutions per minute.
- If the needle enters the red zone ①, the engine is overrevved. Reduce the vehicle speed sufficiently during downhill driving or downshifting to keep the needle from entering this zone.

⇨ P. 7-11

### ⚠ CAUTION

**The term "overrev" refers to rotation of the engine at an RPM exceeding the maximum limit. This occurs when the engine is driven by the wheels during downhill driving or downshifting. Persistent overrevving can lead to an engine breakdown.**




## Water temperature gauge

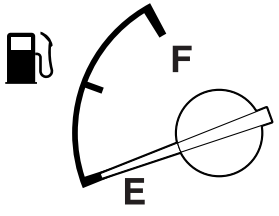
This gauge indicates the temperature of the engine coolant.
With the engine running normally, the needle should be in the center of the scale.
If the needle enters the red zone ①, the engine has overheated. The warning lamp will illuminate at this time. In this event, pull off the road as soon as you can safely do so then let the engine cool down by running it at a speed slightly higher than its idling speed. If the vehicle has an air conditioner, switch it off.

When the gauge needle comes down to approximately the center of the scale, stop the engine and perform the checks and corrective steps described on this reference page: ⇨ P. 13-8

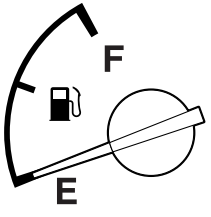
### ⚠ CAUTION

**Be sure to stop the engine only after letting it run at a speed slightly above the idling RPM until the coolant cools down. Turning off the engine immediately after stopping will cause the coolant temperature to rise quickly and may cause the engine to seize up.**

<Manual transmission vehicles>




<Automatic transmission vehicles>




Z12504

## Fuel gauge

The fuel gauge indicates the amount of fuel still remaining in the fuel tank.

F: Full
E: Empty

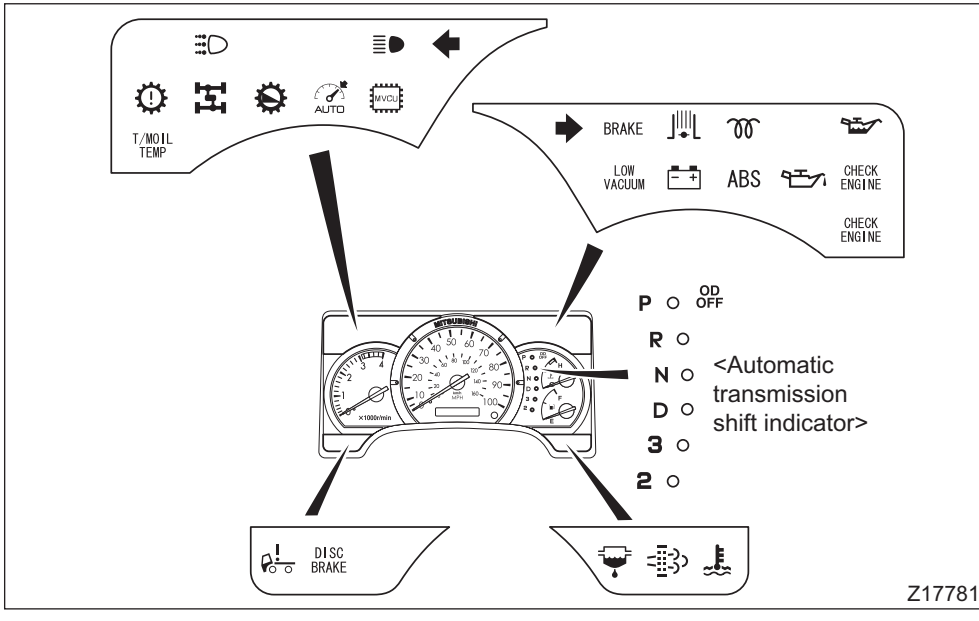
When the needle approaches the “E” mark, refuel as soon as possible.
If the vehicle completely runs out of fuel, air must be bled out of the fuel system. ⇨ P. 13-27

### ⚠ CAUTION

**Be careful not to allow the engine to run out of fuel. Engine stall resulting from an empty tank could cause damage to the fuel injection system.**

*NOTE:*
*Air will be present in the fuel system after the engine has run out of fuel. This air will prevent the engine from starting even after it is adequately refueled. You must bleed the fuel system before the engine can be started.* ⇨ P. 13-27

## Warning/indicator lamps




The illustration shows the standard arrangement of the warning and indicator lamps. Some lamps shown here, however, may not be installed on your vehicle.
Illumination of certain warning lamps is accompanied by sounding of a buzzer. If the parking brake is applied, the buzzer will stop.

### ⚠ CAUTION

**The red warning lamps, if illuminated, warn you of vehicle component failures and possible danger of accident. Never drive the vehicle while a red warning lamp is illuminated. If any of them light up, stop the vehicle as soon as it is safe to do so and make checks for locating the cause. If necessary, have your vehicle repaired by an authorized dealer.**

*NOTE:*
*The red warning lamps may also come on if the engine is started when the battery's performance has decreased. In this event, either charge the battery or replace the battery with a new one.*

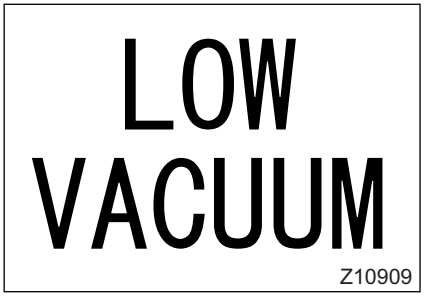
| Lamp symbol | Warning/indicator lamp | If illuminates or flashes | | Ref. page |
|---|---|---|---|---|
| CHECK ENGINE | (Red) Engine control warning lamp | Abnormality in engine control system or DPF system | | 6-12 |
| CHECK ENGINE | (Amber) Engine control warning lamp | Abnormality in exhaust gas control system | | |
| | 4WD indicator lamp <FG> | Four-wheel drive (4WD) mode selected | | 8-3 |
| ABS | ABS warning lamp | Fault in antilock braking system (ABS) | | 6-13 |
| | Automatic transmission warning lamp <Automatic transmission vehicles> | Fault in automatic transmission electronic control system | | 6-13 |
| | Daytime running light indicator lamp | Headlamps (low-beam) illuminated by daytime running light system | | 5-20 |
| | Engine overheating warning lamp | Engine overheating | | 6-14 |
| | Cruise control indicator lamp <Vehicles with cruise control> | Cruise control activated | | 5-23 |
| | Vehicle control warming lamp | Problem in electric control system | | 6-15 |
| | DPF indicator lamp | Slow flashing (1-second interval) | DPF loaded with much PM | 5-31 |
| | | Fast flashing (0.3-second interval) | | |
| | | Continuous illumination | Manual regeneration of DPF in progress | |

*NOTE:*
*Illumination of any warning lamp marked (*) is accompanied by sounding of a buzzer.*

The warning lamps shown below come on when the starter switch is turned from the “ACC” position to the “ON” position but almost immediately go off.

| Lamp symbol | Warning lamp | Operation |
|---|---|---|
| BRAKE | Brake warning lamp | Goes off when engine is started (except if parking brake lever is pulled). <FE85> |
| LOW VACUUM | Vacuum pressure warning lamp <Other than FE85> | Goes off when engine is started. |

| Lamp symbol | Warning lamp | Operation |
|---|---|---|
| | Charge warning lamp | Goes off when engine is started. |
| | Engine oil pressure warning lamp | Goes off when engine is started. |
| CHECK ENGINE | (Red) Engine control warning lamp | Goes off when engine is started. |
| | (Amber) Engine control warning lamp | |
| | Automatic transmission warning lamp <Automatic transmission vehicles> | Goes off a few seconds after starter switch is turned to “ON” position. |
| T/M OIL TEMP | Automatic transmission fluid temperature warning lamp <Automatic transmission vehicles> | Goes off a few seconds after starter switch is turned to “ON” position. |
| DISC BRAKE | Disc brake warning lamp <Vehicles with disc brakes> | Goes off about three seconds after starter switch is turned to “ON” position. |
| ABS | ABS warning lamp | Goes off a few seconds after starter switch is turned to “ON” position. |
| | Vehicle control warming lamp | Goes off a few seconds after starter switch is turned to “ON” position. |




### 1 Low vacuum warning lamp

<Other than FE85>

**⚠ WARNING**

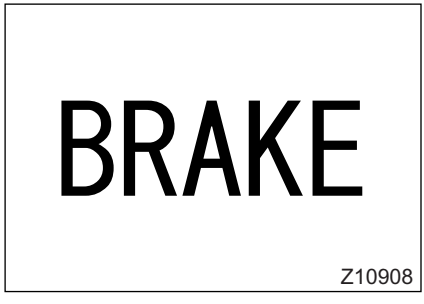
**Braking is dangerously sluggish when the vacuum warning lamp is illuminated. For safety, never drive with the vehicle in this condition.**

This lamp illuminates when the starter switch is turned to the “ON” position. As long as the lamp goes out when the engine is started, the vehicle may be driven. If illuminated while the engine is running, this lamp signals that the vacuum level in the brake vacuum tank has dropped below the safe limit.

This lamp, when illuminated, signals that the vacuum level in the brake vacuum tank has dropped below the safe limit.

Since braking becomes sluggish under this condition, depress the brake pedal with full force to slow down the vehicle, then pull off the road as soon as it is safe to do so, and perform the following checks:

1. Let the engine run at intermediate RPM until the warning lamp goes out.
2. Check piping and its connections for vacuum leaks.
3. If the lamp does not go out or comes on again soon after it has gone out, the vacuum system is defective and must be repaired. Call an authorized dealer.



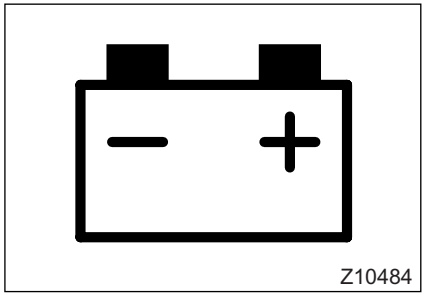

## 2 Brake warning lamp

**⚠ WARNING**

**If the brake warning lamp comes on owing to an excessively low level of brake fluid (or low power steering fluid pressure on FE85), the brakes will not be fully effective and driving will thus be dangerous. Do not drive the vehicle in this condition.**

This lamp lights up when the parking brake lever is pulled, when the brake fluid level drops below the safe limit, or when the power steering fluid pressure is too low on FE85. When the power steering fluid pressure is too low on FE85, illumination of the lamp is accompanied by sounding of a buzzer. The buzzer stops when the parking brake is applied. Should the lamp remain illuminated even after the parking brake lever has been released or light up during driving, pull off the road as soon as it is safe to do so, and perform the checks below.
With the starter switch in the “ON” position and the engine not running, the warning lamp will stay on even if the parking brake lever is released. The lamp will go out if the engine is started.

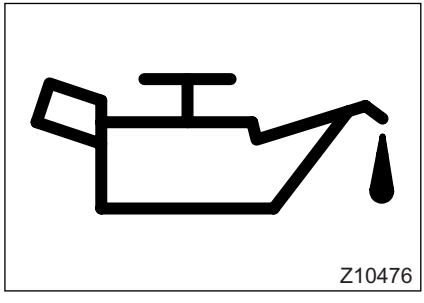
1. Check the brake fluid level.
   Replenish the reservoir if the level is too low.
   ⇨ P. 12-34
2. Pump the brake pedal several times to make sure that the fluid level does not drop.
3. If the fluid level drops, it indicates fluid leakage. Call an authorized dealer.
4. If the warning lamp lights and the buzzer sounds on FE85, never continue driving. Call an authorized dealer.


Z10484

### 3 Charge warning lamp

The charge warning lamp lights up when the starter switch is turned to the “ON” position and goes out as soon as the alternator starts charging the battery after the engine has turned over.
The lamp also lights up if a problem occurs in the battery charging system while the engine is running. If this occurs, pull off the road as soon as it is safe to do so, and perform the following checks.

1. Check for a broken V-belt. Also check belt tension. ⇨ P. 12-55
2. Check for a blown high-current fuse in the battery charging circuit. If blown, replace with a new one. ⇨ P. 13-14
3. If both the above checks have turned out normal, the problem is probably in the battery charging system. Call an authorized dealer.


Z10476

### 4 Engine oil pressure warning lamp

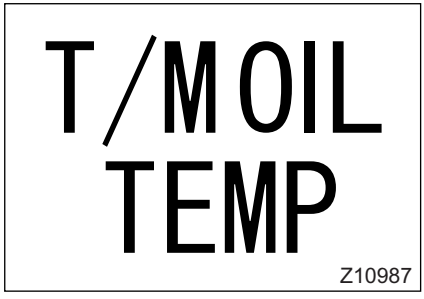
The engine oil pressure/level warning lamp lights up when the starter switch is turned to the “ON” position and goes out as soon as the engine is turned over. If the lamp lights up while the engine is running, the cause may be an excessively low engine oil pressure. Pull off the road as soon as it is safe to do so, and perform the following checks.

1. Check the engine oil level. Add if insufficient. ⇨ P. 12-22
2. Check various parts of the engine for any sign of oil leaks.
3. If the oil level is normal and there are no oil leaks, the problem is in the lubrication system. Call an authorized dealer.

*NOTE:*
*When it is cold, the engine oil’s viscosity is relatively high and this may cause the warning lamp to stay illuminated for a while even after the engine has started. This is a normal condition.*

**⚠ CAUTION**

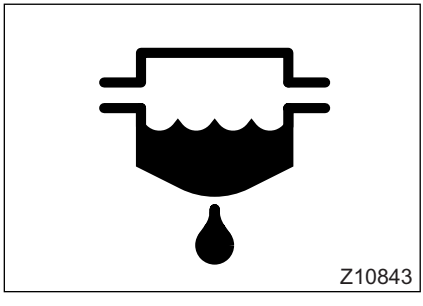
**Never continue driving with the lamp illuminated. The engine could seize up.**




### 5 Automatic transmission fluid temperature warning lamp

<Automatic transmission vehicles>
This lamp comes on when the starter key is turned to “ON”. It should go out in a few seconds.

- This lamp illuminates if the automatic transmission fluid becomes excessively hot.
  If the lamp illuminates while the vehicle is in motion, pull over at the nearest safe place, put the range selector lever in the “P” position, and run the engine at slightly higher than idling speed.
- If the warning lamp goes out, it is safe to continue driving. If the lamp stays on or comes on intermittently, there may be a fault in the cooling fan (located on the left-hand side of the vehicle) or fluid leak. Have the vehicle checked by an authorized dealer.




### 6 Fuel filter warning lamp

If this lamp is illuminated, water is present in the fuel filter in an amount exceeding the limit. Pull off the road as soon as it is safe to do so and drain the fuel filter of water. ⇨ P. 12-45
If the warning lamp does not go out or lights up frequently, have the vehicle checked by an authorized dealer.

**⚠ CAUTION**

**Never continue driving with the lamp illuminated as engine malfunction or fuel injection system failure could result.**

### 7 Disc brake warning lamp

<Vehicles with disc brakes>
This lamp comes on when the starter key is turned to “ON”. It should go out in a few seconds.
This lamp illuminates if the disc brake pads become worn beyond the safe limit and shows that the pads must be replaced by an authorized dealer.

**⚠ WARNING**

**When the disc brake warning lamp is illuminated, the brakes are dangerously ineffective and could cause an accident.**

## 8 Engine control warning lamp

This lamp comes on when the starter key is turned to “ON”. It should go out when the engine starts.

### 8.1 Illumination of red lamp

The red lamp illuminates when an abnormality is detected in the engine control system or DPF system. The engine output may be limited depending on the location of the fault.

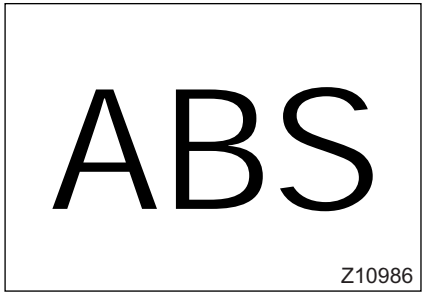
If the lamp illuminates, place the starter switch in “ACC” or “LOCK” position for 3 minutes or longer and then restart the engine. If the lamp stays off, there is no problem. If the lamp illuminates again, stop the engine and contact the nearest authorized dealer.

The red lamp is also illuminated if you continue to drive while the DPF indicator lamp quickly flashes. Illumination of this lamp may indicate a blocked DPF and/or faulty DPF system. If this lamp illuminates during driving, stop the vehicle as soon as it is safe to do so and perform the following inspection.

1. Hold the starter switch in the “ACC” or “LOCK” position for more than 3 minutes, then restart the engine.
2. If the warning lamp goes out, there is nothing abnormal with the system.
3. If the warning lamp remains illuminated, have an authorized dealer perform the necessary inspection.

### 8.2 Illumination of amber lamp

The amber lamp illuminates if the exhaust gas control system has some abnormality and its function deteriorates. If the lamp illuminates, place the starter switch in “ACC” or “LOCK” position for 3 minutes or longer and then restart the engine. If the lamp stays off, there is no problem. If the lamp illuminates again, have your vehicle inspected at an authorized dealer in the earliest opportunity.




## 9 ABS warning lamp

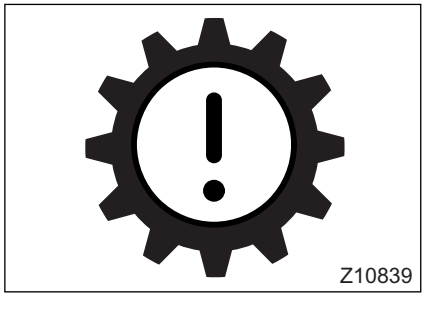
This lamp comes on when the starter key is turned to “ON”. It should go out a few seconds later. If the lamp comes on again, this indicates there is a malfunction in the antilock braking system (ABS). Should this lamp illuminate during driving, stop the vehicle in a safe place and perform the following inspection.

1. Turn the starter key to the “OFF” position and then to the “ON” position again.
2. Determine the system condition as follows:

- The system is normal if the warning lamp goes out a few seconds later.
- The system is faulty if the warning lamp stays on for longer than a few seconds or it goes off but comes on again.
- The system is normal if the warning lamp goes off in a few seconds after the starter key is turned to “ON”. The system is also normal if the warning lamp does not go off a few seconds but then goes off as soon as the vehicle is started.

3. If the system is found to be faulty, have the system repaired by an authorized dealer as soon as possible.

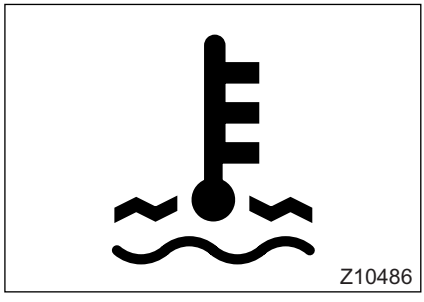
*NOTE:*
*Even with the ABS faulty and the warning lamp remaining lit, the normal brake system is still functioning satisfactorily. Only the ABS function is lost. Drive with great care on slippery surfaces with the vehicle in this condition.*




## 10 Automatic transmission warning lamp

<Automatic transmission vehicle>
This lamp comes on when the starter key is turned to “ON”. It should go out in a few seconds.
The illumination of this lamp indicates a fault in the automatic transmission electronic control system. If the lamp illuminates, stop the vehicle in a safe place, turn the starter key to the “ACC” position to stop the engine, then start the engine again. In certain circumstances, the on-board computer may reset itself, allowing normal operation to continue.
If the fault does not rectify itself or the warning lamp signals abnormal condition again, have an authorized dealer carry out a check.
With the electronic control system malfunctioning, the vehicle can be driven in a “limp-in” mode whereby gearshifts will be made per the table below.

| Range selector position | Limp-in mode gearshift | Normal gearshift |
|---|---|---|
| P | Park | Park |
| R | Reverse | Reverse |
| N | Neutral | Neutral |
| D | Fixed to a certain gear (depending on the nature of the fault) | 1st ↔ 2nd ↔ 3rd ↔ 4th ↔ 5th ↔ 6th |
| 3 | | 1st ↔ 3rd only |
| 2 | | 1st ↔ 2nd only |


Z10486

### 11 Engine overheating warning lamp

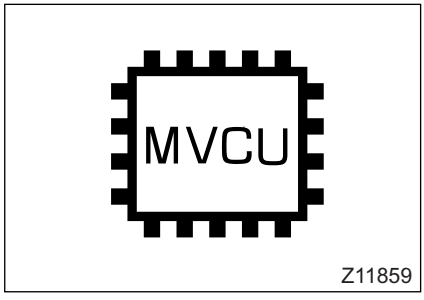
This lamp illuminates and a buzzer sounds if the engine overheats. Should the engine overheat, the needle of the coolant temperature gauge will be in the red zone. The buzzer will stop sounding if you apply the brakes by pulling the parking brake lever. Promptly stop the vehicle, then run the engine at a speed slightly higher than the idling speed until the coolant has cooled down. Also, take other steps that are necessary following overheating of the engine. ⇨ P. 13-8

**⚠ WARNING**

**Driving with an overheated engine can damage the engine or even cause a fire.**

**⚠ CAUTION**

**Be sure to stop the engine only after letting it run at a speed slightly above the idling RPM until the coolant cools down. Turning off the engine immediately after stopping will cause the coolant temperature to rise quickly and may cause the engine to seize up.**




## 12 Vehicle control warning lamp

The vehicle control warning lamp lights up when problems occur in the vehicle's electrical control system. If it lights up, pull off the road as soon as it is safe to do so.
Place the starter switch to the "ACC" or "LOCK" position for more than five seconds, then restart the engine. If the warning lamp goes out, there are no problems. If it remains on, have your vehicle inspected by an authorized dealer as soon as possible.

*NOTE:*
*The MVCU warning lamp will light up when the starter switch is turned to the "ON" position and the engine is not running. If it goes out after a few seconds, there are no problems.*

# 7. Starting and driving

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Precautions for driving ..... 7-3
Tips for improving fuel economy ..... 7-7
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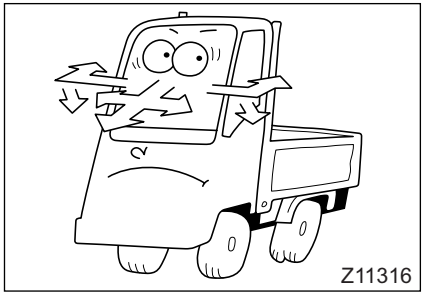

Z11316

## Precautions when setting the vehicle in motion

- Do not carry containers of fuel or spray cans in the cabin.

**⚠ WARNING**

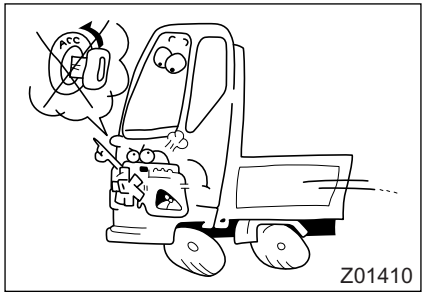
**Carrying fuel in the cabin is extremely dangerous because an increase in the cabin temperature could cause fuel vapor to catch fire or cause the container to rupture.**

- Do not attach anything to the windshield.
- Check the immediate area around the vehicle, using mirrors as necessary: there should be no persons or obstacles under, in front of, on either side, or behind the vehicle. Be particularly careful when backing up.
  If you wish to back up but cannot confirm safety behind the vehicle using the mirrors, get out of the vehicle and perform the check.
- Check that none of the red warning lamps are illuminated. The BRAKE warning lamp will go out when the parking brake is released.
- Fully release the parking brake.
- Set manual transmission vehicles in motion slowly. When pulling away, avoid racing the engine and suddenly engaging the clutch. Sudden starts place undue strain on the vehicle and should be avoided. Also, avoid slipping the clutch for extended periods since this can damage it.

- In an automatic transmission vehicle, depress the brake pedal and move the range selector lever out of the “P” position. The range selector lever cannot be moved unless the brake pedal is depressed. If the engine’s idling speed is too high, selecting the “D” or “R” ranges may make the vehicle lurch. Normalize the engine’s idling speed before pulling away.

## Precautions for driving

Observe the following precautions while driving. Should you notice anything unusual about the vehicle, immediately stop the vehicle and inspect the relevant sections to find the cause of the trouble. If you are unable to identify the cause of the trouble or unable to do the repairs yourself, call your nearest authorized dealer.




- Do not stop the engine while the vehicle is moving.

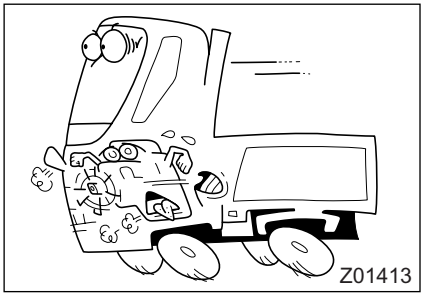
**⚠ WARNING**

**Never place the starter switch in any position other than the “ON” position while operating the vehicle.**
**If you turn the starter switch to the “ACC” position, the engine will stop. This is dangerous.**
**If the engine stops during driving:**
- **The braking force reduces extremely.**
- **The power steering system becomes inoperative, rendering steering dangerously sluggish.**
- **The electrical circuits of the warning lamps, meters, etc. become inoperative, causing electric components to malfunction.**

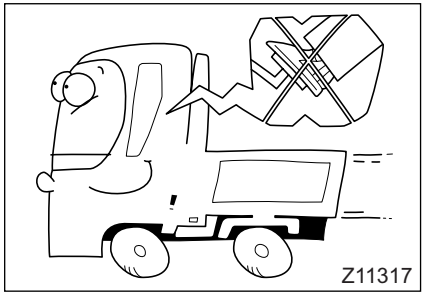
**Removing the starter key causes the steering wheel to lock, making it impossible to steer the vehicle.**

- Should the engine stall while the vehicle is in motion, do not panic. Simply depress the brake pedal to slow the vehicle, and pull off the road as soon as it is safe to do so.

- If a red warning lamp comes on, the buzzer sounds, or the vehicle behaves abnormally, stop the vehicle in the nearest safe place and investigate the cause. ⇨ P. 6-5
  If you cannot identify the cause or cannot rectify the problem, contact an authorized dealer.
- Avoid making sharp turns and braking hard except in emergencies. Doing so during high-speed driving could cause the vehicle to tip over.
- If you notice a strange noise, vibration, or smell, or if steering or braking feels unusual, pull the vehicle off the road as soon as it is safe to do so and check for the source of the trouble. If you cannot determine the cause of the problem and/or cannot rectify it, contact the nearest authorized dealer.
- When driving on narrow streets or when making a turn, keep in mind that the tracking of the front and rear inner wheels is different, and also make sure of rearward safety using the rearview mirrors.
- Remember that the mirrors protrude from the vehicle body. Be careful not to hit pedestrians and obstructions with the mirrors when driving on narrow roads.
  Looking at the mirrors while driving causes your line of vision to move significantly. Be sure to keep paying attention to safety ahead of the vehicle.
- Do not keep the steering wheel turned fully to either side for more than 10 seconds. Doing so could cause the power steering system to malfunction.
- Do not try to forcefully turn the steering wheel when the front wheels are stuck against a curbstone or other object. Doing so could cause the steering gearbox to fail.
- Continuous high-speed driving burdens the engine and other vehicle parts. Allow yourself enough time that you do not need to push the vehicle too hard.
- Perform your pre-operation checks with particular care when you expect to drive at high speeds.
  When continuously driving at high speeds, your sense of speed may become dull. Pay constant attention to your speed, and maintain an adequate distance from the preceding vehicle.


Z01413

- If a tire bursts or gets punctured while you are driving at high speed, do not panic. Keep a firm grip on the steering wheel and gradually reduce your speed. Stop the vehicle in the nearest safe place. Do not brake sharply. Braking sharply would be dangerous because the steering wheel would be pulled to one side with great force.
- When driving at high speeds in the rain, it sometimes happens that the tires ride on a film of water and lose contact with the road surface. This is known as “hydroplaning”. If this should happen, you will lose control of both steering and braking. Therefore, be sure to maintain moderate speeds on rainy days.
  Hydroplaning can easily occur if tire tread is worn to the point where the tread pattern is very shallow.
- Using the exhaust brake on a wet, frozen, snow-covered, or otherwise slippery road surface when the vehicle is lightly loaded or not loaded can cause the tires to slip on the road surface, resulting in a skid. Do not use the exhaust brake on slippery road surfaces.
- Do not use a mobile telephone while driving. If you wish to use a mobile telephone, first stop the vehicle in a safe place. Using a mobile telephone while driving could distract your attention from the vehicle and from the road ahead, resulting in an accident.
- Operate the radio and other items of equipment in the cab when the vehicle is stationary. It is dangerous to operate such items of equipment or use a carphone (other than a hands-free type) while driving.
- Do not allow a child to touch the driver’s controls and other equipment. A child’s interference could cause a fault or accident.




### 1 When driving a manual transmission vehicle

- Avoid slipping the clutch excessively. Partially depressing the clutch pedal while the vehicle is in motion causes the clutch to slip and shortens the service life of the clutch.
- Avoid suddenly releasing the clutch pedal since this places undue stress on the vehicle and shortens the service life of the clutch.

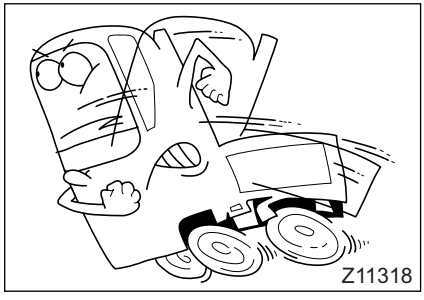
- Do not operate the vehicle with the clutch disengaged or the gearshift lever in neutral.
  Doing so will render the engine braking and exhaust brake features ineffective, forcing you to rely only on the service brakes and overusing them in the process.
- Before shifting down, wait for the tachometer needle to drop below 2,000 rpm. Not shifting down in this manner could cause the engine to overrev.

## ⚠ CAUTION

**"Overrev" refers to an operating state of the engine in which it rotates at an RPM higher than the recommended maximum RPM. Overrevving the engine could lead to an engine failure.**

### 2 When driving an automatic transmission vehicle

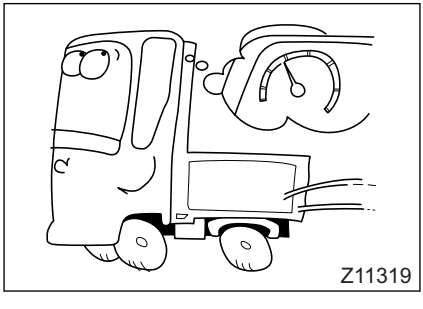
- For normal driving, select the "D" range and use the overdrive switch depending on conditions.
  ⇨ P. 5-18
  It is possible to pull away using the range selector lever in the same way as a manual gearshift lever, starting in "2", then upshifting through "3" to "D".
- Do not push the range selector lever into the "N" or "P" position while the vehicle is in motion. This would make engine braking and exhaust braking impossible and force you to overuse the service brakes. It could also damage the transmission.
- When the vehicle is driving fast, shifting down will be prohibited by a safety device. In such cases, depress the brake pedal and reduce the vehicle speed.
- If you stop the vehicle momentarily, for example, at a red light, keep the brake pedal firmly depressed. If you must wait for longer than expected, select the "N" or "P" range and pull the parking brake lever.
- If you stop temporarily when driving uphill, depress the brake pedal and pull the parking brake lever. Do not attempt to stop the vehicle from rolling backwards with the accelerator pedal.


Z11318

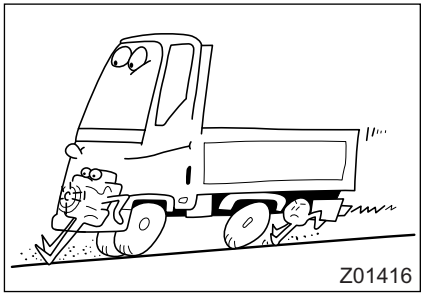
## Tips for improving fuel economy

Observe the following precautions to achieve maximum fuel economy and to extend tire life.

- Continue warming up the engine only to the point at which the water temperature gauge needle begins to move.
- Avoid racing the engine as doing so not only wastes fuel but also harms the engine.
- Avoid sudden starts, sudden acceleration, and sudden braking.
- When accelerating, do not wind the engine out before changing gears; instead, change gears before engine speed reaches a high RPM.
- Fuel consumption can be minimized by keeping the tachometer needle in the 1,500 to 2,000 rpm range.
- With an automatic vehicle, fuel consumption can be further minimized by setting the overdrive switch to ON.


Z11319

- Try to drive at moderate and constant speeds. Unnecessary acceleration and deceleration causes fuel waste.
- Do not keep the exhaust brake switch in the activation position at all times. Frequent use of the exhaust brake reduces fuel economy. Move the exhaust brake switch between the activation and non-activation positions as necessary for road and traffic conditions.
- Always keep the air pressure in tires correctly adjusted.
- Try to load cargo in a way that minimizes wind resistance. ⇨ P. 7-18
- Be sure to perform the pre-operational checks and periodic inspections.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## Braking

When driving downhill, use engine braking as well as exhaust braking in combination with the foot brake. ⇨ P. 7-11

### ⚠ WARNING

- **When warning lamps LOW VACUUM and/or BRAKE DISC BRAKE light up, immediately stop the vehicle and perform necessary checks. ⇨ P. 6-6**
- **Using the exhaust brake on a wet, frozen, snow-covered, or otherwise slippery road surface when the vehicle is lightly loaded or not loaded can cause the tires to slip on the road surface, resulting in a skid. Do not use the exhaust brake on slippery road surfaces.**
- **Sudden braking will wear down tires and could cause malfunctions in other sections of the vehicle. Avoid sudden braking except in emergencies.**
  **Sudden braking could also result in an injury due to shocks.**

1. Use engine braking and exhaust brake to decelerate sufficiently before applying the brakes.
2. Depressing the brake pedal in two or three stages contributes to stable braking.
   Remember that the braking distance varies with vehicle speed, load weight, and road conditions.

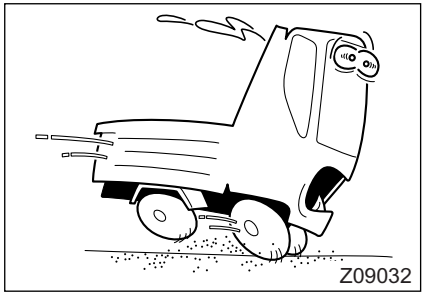
*NOTE:*
*Engine braking is a braking effect realized when the accelerator pedal is released during vehicle operation. The lower the transmission gear, the more powerful the engine braking.*

## Antilock braking system (ABS)

The ABS operates automatically without need for any manual control. However, you are requested to read the following instructions and precautions to ensure safe driving with your ABS-equipped vehicle.

**⚠ WARNING**

**Even the ABS cannot remove limitations on the vehicle's running and braking performance. It is your responsibility to judge road and other conditions properly and drive safely on slippery surfaces.**


Z09032

*NOTE:*
*When driving on slippery surfaces, activating the brakes could lock the wheels and the vehicle is very likely to lose directional control due to resulting skids. The ABS minimizes such wheel locking by electronically controlling the braking force of each wheel.*

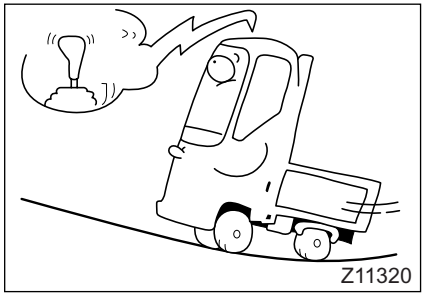
- If the ABS warning lamp illuminates during driving, it indicates that the ABS is faulty. The ABS function will then be completely lost but normal brake system will still function properly.
⇨ P. 6-13
- On slippery surfaces, the braking distance for vehicles with an ABS is generally shorter than that for vehicles without it. This difference, however, varies with road surface conditions. It is always important to maintain sufficient distance from the vehicle ahead regardless of whether your vehicle is equipped with an ABS or not. Also, the braking distance of an ABS-equipped vehicle on gravel or heavily snow-covered roads may be longer than that for a vehicle without an ABS. On these roads, therefore, be sure to drive at reduced speeds. Also, avoid sudden maneuvering or braking on such roads to prevent collision with the vehicle behind you.
- Slight vibration will be felt on the vehicle body and brake pedal when the ABS is in operation. Also, the sound of motor operation may be heard. These indicate the ABS is operating normally and do not indicate any abnormal condition. Keep fully depressing the brake pedal.
- When the ABS starts functioning after sudden braking, the steering wheel may be pulled slightly to one side because of braking power distribution control made by the system. Especially in a condition where the traction is different between the right and left wheels (on a road covered by ice on one side and not on the other side, for example), you may need to correct direction with the steering wheel.

- The ABS cannot prevent the vehicle from overturning on a slippery surface that could result from excessive speed being used in sharp turns. Avoid driving at too high a speed or in a way which requires quick operation of the steering wheel.
- There is likelihood of skidding due to the effect of engine braking on slippery surfaces when the vehicle carries little or no load. In such a situation, it is recommended to depress the clutch pedal first and then the brake pedal.
- If cargo is loaded only on the back half of the cargo bed, the rear wheel brakes must share an extremely large burden during braking to prevent the front wheels from locking. On a snow-covered or otherwise slippery, long downslope, use engine/exhaust braking and minimize use of the service brakes.
- The exhaust brake, if activated, is released temporarily when the ABS comes into function.

**⚠ WARNING**

**If the tires slip when driving around a slippery curve or over a gap with the exhaust brake working, the ABS will start functioning and the exhaust brake will be temporarily deactivated. Always slow down before entering a curve.**

- Before you install a radio transmitter/receiver equipment or tires of a size different from the original ones, be sure to consult an authorized dealer.
- Even if the ABS system fails and the ABS warning lamp illuminates, the normal brakes still work properly. You must, however, drive very carefully on slippery roads. ⇨ P. 6-13


Z11320

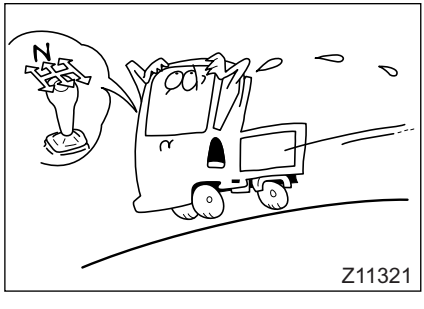
## On uphill and downhill roads

### 1 Uphill roads

- Downshift early when the speed begins to drop to minimize the load on the engine.
- With an automatic transmission vehicle, downshifting can be performed either with the range selector lever or by depressing the accelerator pedal hard. If you depress the accelerator pedal to maintain a constant speed when driving uphill, the transmission may shift down and the engine speed increase.

### 2 Downhill roads

- If you are going to drive down a steep road or a road with a long downhill grade, test the service brakes and exhaust brake in advance to make sure that they are functioning well.
- Place the vehicle in the gear used when driving uphill and use engine braking and exhaust brake to help slow the vehicle. Never drive downhill at high speeds.
- If your vehicle is equipped with an automatic transmission, leaving the range selector lever in the “D” position will result in insufficient engine braking, causing the vehicle to speed up too much. Set the overdrive switch to OFF and add engine braking by shifting down to “3” or “2” depending on the steepness of the slope. Use the service brakes to prevent the vehicle speeding up excessively when the range selector lever is in the “3” or “2” position.
- On slippery roads, avoid sudden engine braking since this could cause a skid.



Z11321

- Never coast downhill with the gearshift lever in neutral (manual transmission vehicles) or the range selector lever in the “N” position (automatic transmission vehicles). Doing so makes both engine braking and exhaust brake inoperative, which in turn excessively burdens the service brakes. This also causes the brakes to overheat and the brake linings to wear out prematurely.
  In an automatic transmission vehicle, this can also cause damage to the transmission.
- Avoid overusing the service brakes as the resultant overheating could cause undesirable vapor lock and fading, both of which contribute to poor braking.

*NOTE:*
- *"Vapor lock" refers to the condition in which the brake system overheats, causing the brake fluid to boil and form bubbles that weaken hydraulic pressure, resulting in poor braking.*
- *"Fading" refers to the condition in which the brake linings or brake pads overheat to the point where friction is significantly reduced. This also results in poor braking.*

**⚠ WARNING**

**Except in an emergency, never apply the parking brake while the vehicle is moving since the vehicle could spin and/or overturn.**

- First decelerate the engine sufficiently before downshifting.
  Downshifting more than two gears at a time or downshifting at a high engine speed could cause the engine to overrev.
  Decelerate, as a rule, to roughly 2,000 rpm before downshifting, and pay attention not to let the needle enter the red zone during driving.
  In an automatic transmission vehicle, shifting down will be prohibited by a safety device if the vehicle is driving fast. In such cases, depress the brake pedal and reduce the vehicle speed.

*NOTE:*
*"Overrev" refers to an operating state of the engine in which it rotates at an RPM higher than the recommended maximum RPM. Overrevving the engine could lead to an engine failure.*

Z11323

## On rough roads and in bad weather

- Use a low gear and try to drive at a constant speed when driving on gravel roads or muddy roads.
- Do not race the engine when attempting to move out of mud. Racing the engine is useless and even worsens the condition as the spinning wheels will make ruts deeper. Instead, place thick waste cloth, gravel or the like under tires, and engage the 1st and reverse gears alternately or, in an automatic transmission vehicle, shift the range selector lever into the “D” and “R” positions alternately to move the vehicle back and forth until you can drive out.

### ⚠ CAUTION

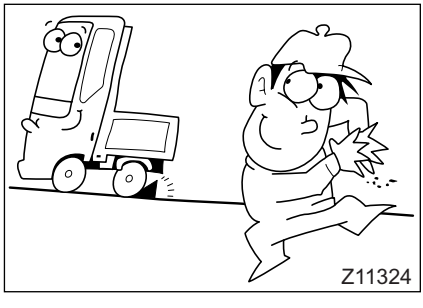
**Do not operate an automatic transmission in this way for more than 5 minutes since it causes the transmission oil to heat up rapidly.**

- Drive very slowly on bumpy roads and take care not to allow the undercarriage to bottom out.
  When the diesel particulate filter (DPF) strikes a rock or other obstacle, its internal catalyst and ceramic filter may be damaged. Have it checked by an authorized dealer.
- Avoid sudden steering and sudden braking on roads which are slippery from rain. Conditions are especially dangerous just after it begins to rain. Use engine braking and the exhaust brake together with the wheel brakes to decelerate. Note, however, that sudden engine braking can cause a skid. Drive at a speed at which you can stay comfortably in control of the vehicle.
- When the vehicle is driven through puddles or washed with water, braking performance can be reduced by water entering the brake drums or splashed over the brake discs. In this event, drive slowly with light pressure on the brake pedal to dry out the brakes. Pay attention to nearby vehicles while doing so.
- Avoid driving when the road is covered with much water because of torrential rain or other causes. Should your vehicle be soaked by water, have it inspected by an authorized dealer as soon as possible.
  - If water gets into the engine, it can cause engine damage.

- If water gets into the high-current fuse box, it can cause a short circuit that may result in a fire.
- If water gets into wheel hub bearings, king pins, tie rod ends, and the components around them, it can cause the bearings and other parts used in them to be rusted and ultimately to seize up.
- If water gets into the DPF, the oxidation catalyst and ceramic filter could be damaged.

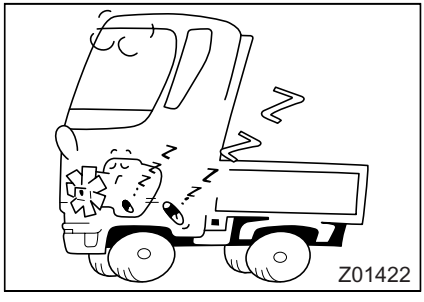
- In fog, drive carefully at low speeds, paying attention to the center line and the vehicle ahead of you.
- When driving in snow or on frozen roads, use tire chains or snow tires and drive at a moderate speed. Avoid sudden braking and sharp turns.

## Parking




**⚠ WARNING**

- **Park the vehicle on the flattest available surface.**
  **Avoid parking on slopes.**
  **When you cannot avoid parking on a slope, apply chocks to the wheels. You can further improve safety by leaving the steering wheel turned so the vehicle will roll toward an obstacle (for example, a curbstone) in the unlikely event of movement.**
- **Be sure to apply the parking brake fully.**
- **On an automatic transmission vehicle, never park the vehicle without applying the parking brake. Do not rely only on setting the range selector lever in the "P" position.**
  **If you cannot avoid parking on a slope, be sure to apply the parking brake securely and apply chocks to the wheels. Depending on the condition of the vehicle, the automatic transmission's parking mechanism ("P" position) may be damaged and released, possibly leading to a serious accident.**




**⚠ WARNING**

- **The engine and exhaust pipe are extremely hot immediately after the vehicle has been driven. Do not park the vehicle in any place where there is dry grass, waste paper, or other flammable material.**
- **Always stop the engine before sleeping in the cabin. You could otherwise cause an accident by unintentionally moving the accelerator pedal or shift lever while sleeping. Also, you could suffer carbon-monoxide poisoning from exhaust gases if the vehicle is parked in a closed space.**
- **Never leave lighters, cans of carbonated drink, and spectacles in the cabin when parking the vehicle in hot sunshine. The cabin will become extremely hot, so lighters and other flammable items may catch fire and unopened drink cans (including beer cans) may rupture. The heat may also affect plastic spectacle lenses and other spectacle parts that are made of plastic. For example, the coating on the lenses may crack and the lenses themselves may become deformed.**
- **Always use the mirrors to confirm safety before opening a door. Suddenly opening a door is dangerous because the door may obstruct cars, motorcycles, bicycles, and pedestrians coming from behind.**

1. In a manual transmission vehicle, put the gearshift lever in the neutral position when the vehicle is stationary.
   In an automatic transmission vehicle, pull the parking brake lever while keeping the brake pedal depressed, and then place the range selector lever in the “P” position.
2. Pull the parking brake lever.

**⚠ WARNING**

**Brake faults that would cause the BRAKE warning lamp to illuminate have no effect on the parking brake. If the BRAKE warning lamp illuminates, be sure to apply the parking brake.**

3. Stop the engine by turning the starter switch to the “ACC” position. ⇨ P. 5-12

4. To help prevent theft and needless consumption of electricity from the battery, be sure to remove the starter key and lock the doors.

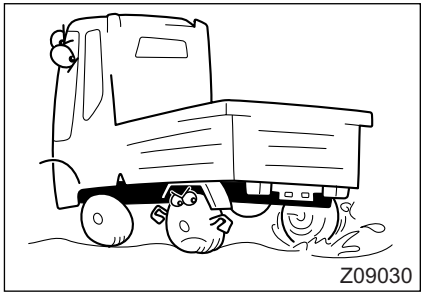
## ⚠ CAUTION

- **Leaving the vehicle sitting for a long time with the starter switch in the "ON" or "ACC" position could result in a dead battery.**
- **Be sure to turn off all lights after parking to prevent drainage of the battery.**

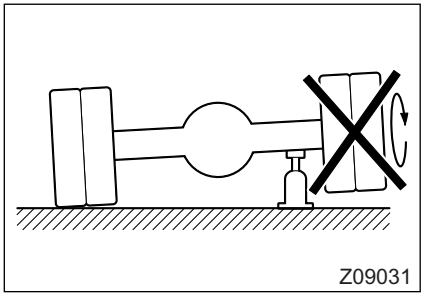
5. If parking on a slope is unavoidable, block the wheels securely with chocks and take any other necessary measures to prevent the vehicle from moving.

## Vehicles with limited slip differential OPT.

<Standard on FG>


Z09030

The limited slip differential performs a special function in addition to the ordinary differential function which is needed when the vehicle is in a turn. When one wheel begins to spin on a slippery surface, the limited slip differential provides most of the driving force to the wheel which is not spinning, thus automatically stopping the spinning and providing traction to the vehicle.
This function is effective when driving on bumpy or snow laden roads, and useful when moving the vehicle out of mud.

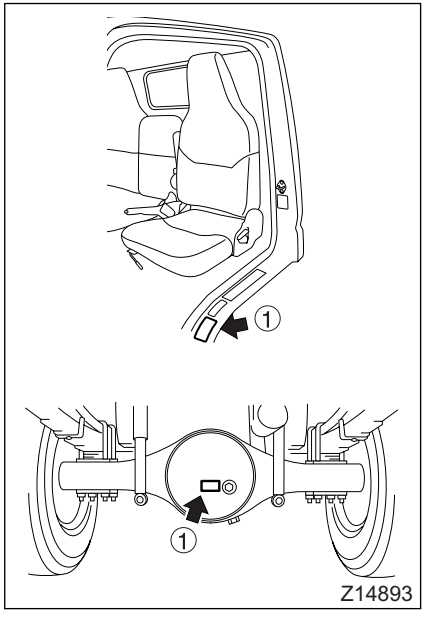

Z09031

## ⚠ WARNING

**When you raise the vehicle on one side for replacing a tire or any other purpose, never rotate the raised wheel. Doing so is dangerous as power is transmitted to the wheel which is on the ground and the vehicle could move.**

## ⚠ CAUTION

**Use only the special oil designed for limited slip differentials if your vehicle is equipped with a limited slip differential.**

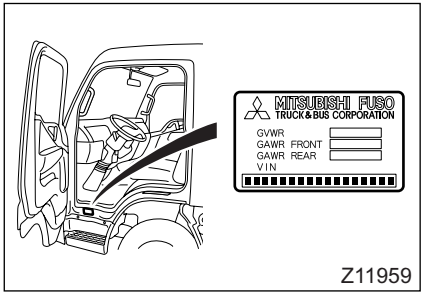



*NOTE:*
*A vehicle with limited slip differential can be identified by precautionary stickers ① near its driver's seat and on the rear axle housing.*

The limited slip differential actions take place automatically, but you are recommended to pay attention to the following points:

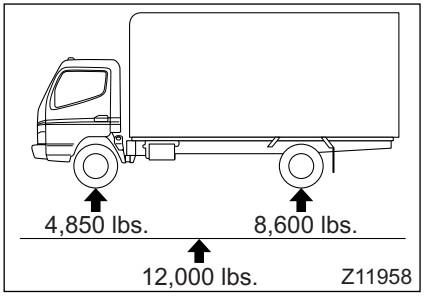
- On slippery road surfaces, excessively depressing the accelerator pedal during a turn may cause the vehicle to skid and lose balance. Keep this in mind for your safety.
- Using tires different in air pressure or outside diameter between the right and left wheels may result in pulling the vehicle to one side during acceleration or uneven wear of tires. Check the tires regularly to make sure the right and left ones are inflated to the same pressure and not different in outside diameter.
- Distribute the load weight evenly. If the load is heavier at the rear, the vehicle's tendency to move in a straight line will slightly increase.

## Loading cargo




### 1 Do not overloading the vehicle.

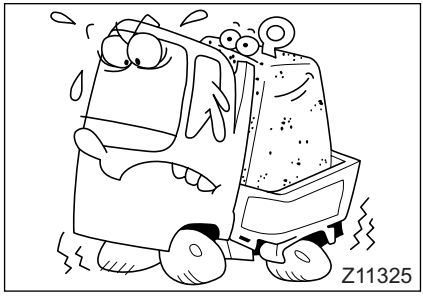
- Overloading the vehicle causes braking performance to deteriorate and can thus cause an accident. Also, overloading the vehicle places excessive stress on vehicle parts, shortening their service lives. The vehicle is designed to perform best when loaded within its Gross Vehicle Weight Rating (GVWR) and within its front and rear Gross Axle Weight Ratings (GAWR). Try not to exceed these ratings.
- The vehicle's GVWR, front GAWR, and rear GAWR are listed on the VIN plate that is located as shown in the illustration.




*NOTE:*
*Loading to a weight almost equal to a total of the front and rear GAWRs may exceed the GVWR.*
*For example, a vehicle with a GVWR of 12,000 lbs. (5,445 kg) has a front GAWR of 4,850 lbs. (2,200 kg) and a rear GAWR of 8,600 lbs. (3,900 kg). Added together, the GAWRs total 13,450 lbs. (6,100 kg), thus exceeding the GVWR. Be sure neither the GAWRs nor GVWR are exceeded.*

**⚠ WARNING**

- **Overloading the vehicle can damage the vehicle and make safe driving difficult. For safety, never overload.**
- **The GVWR and GAWRs pertain to the maximum load the vehicle can physically carry. Please also abide by state and regional loading limit requirements.**
- **Do not carry passengers in the cargo area while the vehicle is in motion.**

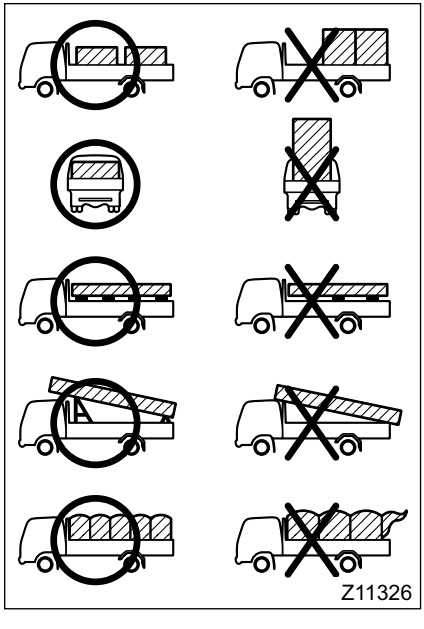

Z11325

## 2 How to load cargo

Improperly loaded cargo not only is unstable but also may result in uneven weight distribution which could damage the cargo deck and frame.

**⚠ WARNING**

- **When roping up cargo or covering it with a tarpaulin, make sure that neither the rope nor the end of the tarpaulin hang down between the cab and the cargo deck as a loosely hanging rope or tarpaulin could catch fire from the engine heat.**
- **When spreading the tarpaulin, take care not to let it cover or be drawn into the engine air intake duct.**
- **When loading heavy cargo, take adequate measures to stop it from slipping. Also use wire to secure it.**
- **Do not place wooden boards or other items between the cargo bed and frame. The heat from the exhaust pipe could set fire to them.**


Z11326

- Place the cargo evenly on deck.
- If cargo is piled high, the vehicle is at risk of rolling over upon being hit with a side wind or making a turn.
- If you place supports under the cargo, position them at equal intervals.
- Use suitable supports when loading long objects. Avoid supporting long objects only with the gate and the rear edge of the cargo deck.
- To prevent cargo from falling, strap it down securely and cover it with a tarpaulin. Secure the tarpaulin ends neatly so they do not flap.

# 8. 4WD operation <FG models>

Control and indicator lamps for 4WD operation ..... 8-2
Advice on use of the 4WD mode ..... 8-8
Precautions to be taken when selecting the 4WD mode ..... 8-10

## Control and indicator lamps for 4WD operation

Select the 2WD (rear-wheel-drive) mode or 4WD (all-wheel-drive) mode as necessary for the condition of the road surface. The 4WD mode can be used for extra traction on rough road surfaces and on snow-covered road surfaces (in mountainous regions, for example).

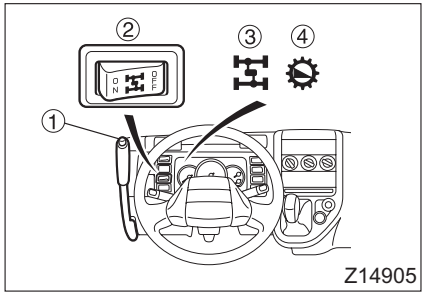
### ⚠ CAUTION

**With a 4WD vehicle, power is applied to both the front wheels and rear wheels; if incorrect tires are fitted, they can prevent the vehicle from performing to its full potential and can even cause an accident. Incorrect tires can also adversely affect powertrain components. Please observe the following tire-related cautions:**

- **Make sure all of the tires are the specified size and are identical in terms of manufacturer, brand, and tread pattern. Be particularly careful when fitting snow tires or other winter-use tires.**
- **Use tires that do not differ from each other in terms of the extent of wear.**
- **Regularly check the tire inflation pressures and keep them adjusted to the specified values.**
- **When tire replacement is necessary, replace all of the tires at the same time.**
- **Use genuine wheels. Do not change the wheel size.**
- **To ensure that the tires wear evenly, rotate the tires every 10,000 km (6,000 miles).**

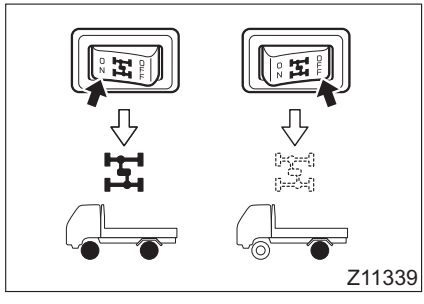
**For towing of the vehicle, raise the front wheels off the ground and disconnect the propeller shaft at the end closer to the rear wheels.**

**The 4WD mode is not recommended for driving on dry paved roads as the tires may wear down prematurely, the running noise may increase, and more fuel may be consumed. Malfunction of the drive train components may also result. Be sure to drive in the 2WD mode on dry paved roads.**




## 1 Location of control and indicator lamps

① HIGH-LOW selector lever
② Front drive switch
③ 4WD indicator lamp
④ LOW range indicator lamp

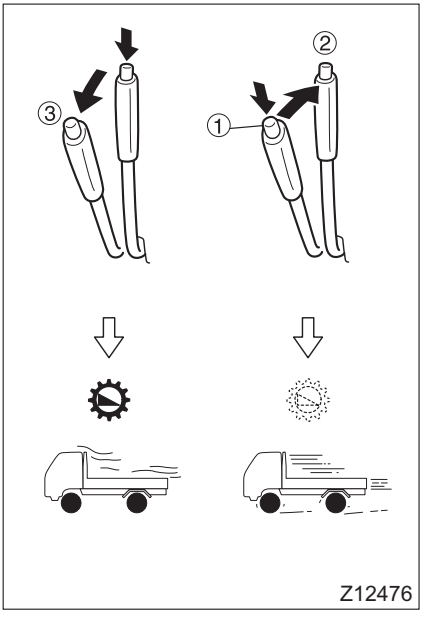



### 1.1 Front drive switch

- The front drive switch is used to select either the two-wheel drive (2WD) mode that uses only the two rear wheels as driving wheels or the four-wheel drive (4WD) mode in which the engine power is transmitted to all four wheels. Pressing the “ON” side of this switch selects the 4WD mode, whereas pressing the “OFF” side selects the 2WD mode. The indicator lamp lights up when the 4WD mode is selected.
- The mode selection can be performed without depressing the clutch pedal.

## ⚠ CAUTION

**Make sure that the free-wheeling hubs on both the front wheels are in the “LOCK” position when the 4WD mode is selected; in the “FREE” position, the engine power is not transmitted to the front wheels.** ⇨ P. 8-7



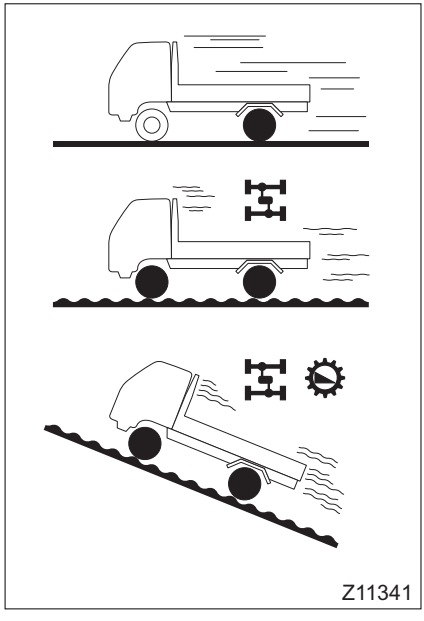

**1.2 HIGH-LOW selector lever**

- When the 4WD mode is selected, this lever allows the driver to select either the high-speed range or the low-speed range of the transfer gear.
  With the vehicle stationary and the clutch pedal depressed, hold down the lever button ① and move the lever to the high-speed range position ② to select the high-speed range or to the low-speed range position ③ to select the low-speed range. The ⚙ indicator lamp comes on when the low-speed range is selected.
- To change the range from one to the other, hold down the clutch pedal with the vehicle stationary and move the lever fully to the LOW range position until the ⚙ indicator lamp comes on or to the HIGH range position until the lamp goes off. After operating the lever, check that the lever is locked in position by trying to move it back and forth without pressing the button.

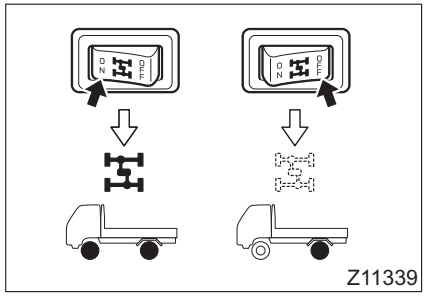
*NOTE:*
*Do not operate the HIGH-LOW selector lever during driving.*
*Operation of the lever has no effect while the vehicle is in motion. Always switch the transfer gear range when the vehicle is stationary and after depressing the clutch pedal.*

## 2 Selecting drive mode-transfer gear range combinations

You can select any desired drive mode and transfer gear range combination from among those shown in the following table. Select the most suitable combination according to the driving conditions.


Z11341

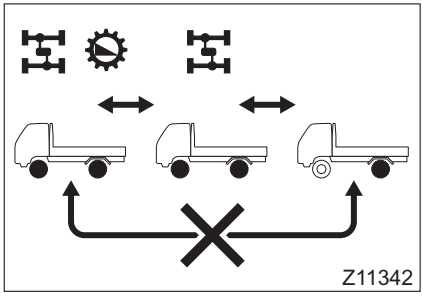
| Mode-range combination | | Illuminated indicator lamp | Driving conditions |
|---|---|---|---|
| 2WD – HIGH | | – | Normal road driving |
| 4WD | HIGH | | Driving on snow-covered, frozen, or sandy roads or other difficult roads where running in the two-wheel drive mode is inappropriate. |
| | LOW | | Driving on steep uphill or muddy roads or other roads where exceptionally good traction is required. |


Z11339

## 3 Switching the mode-range combination

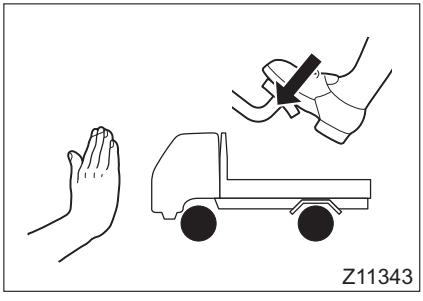
- **“2WD-HIGH” to/from “4WD-HIGH”**

1. Make sure that the free-wheeling hubs on both front wheels are in the “LOCK” position.
⇨ P. 8-7
2. Press the front drive switch either at the “ON” side (4WD) or “OFF” side (2WD) when the vehicle is either in motion or stationary.



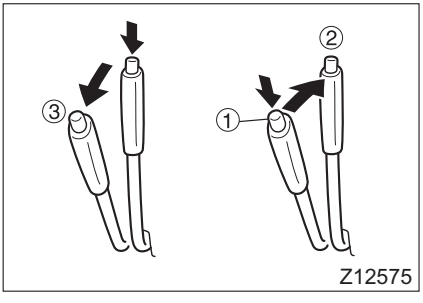

*NOTE:*

- *You do not need to depress the clutch pedal when switching from the 2WD-HIGH setting to the 4WD-HIGH setting or vice versa.*
- *The mode-range setting cannot be switched from 4WD-LOW to 2WD-HIGH. The 4WD-HIGH setting must be selected before such switching can take place.*
- *If it is difficult to switch from 2WD mode to 4WD mode and vice versa, release the accelerator pedal and then depress it again lightly. This will facilitate the switching.*
- *During switching from 4WD mode to 2WD mode, the system may remain in 4WD mode even after the indicator lamp has gone out. If this happens, release the accelerator pedal and depress it again lightly. The switching will then take place.*




- **"4WD-HIGH" to/from "4WD-LOW"**

1. Stop the vehicle and depress the clutch pedal.




2. Move the HIGH-LOW lever while pressing the button ① on it to the HIGH range position ② or LOW range position ③.

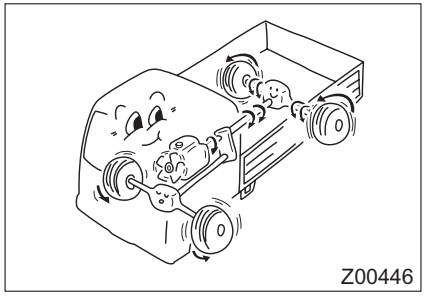
3. After moving the lever fully to the HIGH range or LOW range position, make sure that the indicator lamp has come on or gone off and then release the clutch pedal. Check that the lever is locked properly by trying to move it back and forth without pressing the button.

*NOTE:*

- *If the HIGH-LOW lever cannot be moved even with the button pressed, release and re-depress the clutch pedal. You will then be able to operate the lever.*
- *If the vehicle refuses to move even with the ⚙ indicator lamp come on or gone off after operating the HIGH-LOW lever, release and re-depress the clutch pedal, and then perform the lever operation again.*

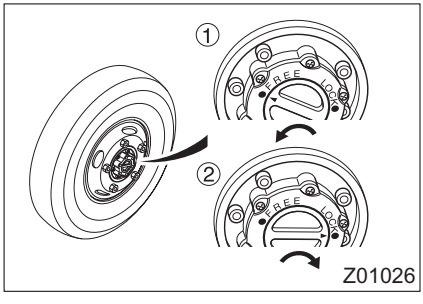
## ⚠ CAUTION

**When 2WD mode is selected, you cannot change the range to LOW. In this mode the lever is locked to the HIGH range and it cannot be moved even if you press the button. Always select 4WD mode before switching the range to LOW.**


Z00446

### 4 Free-wheeling hub

- Even when the 4WD vehicle is running in the two-wheel drive mode with the engine power transmitted only to the rear wheels, the front wheels are always connected to the power train (differential, propeller shaft and transfer). The free-wheeling hub is a device to release the wheels from the power train to allow them to rotate freely, thus saving energy and improving power economy.



Z01026

- Set the free-wheeling hub as follows:
- For propulsion of the vehicle in the 2WD mode, set each free-wheeling hub to the “FREE” position ①.
- For propulsion of the vehicle in the 4WD mode, set each free-wheeling hub to the “LOCK” position ②.

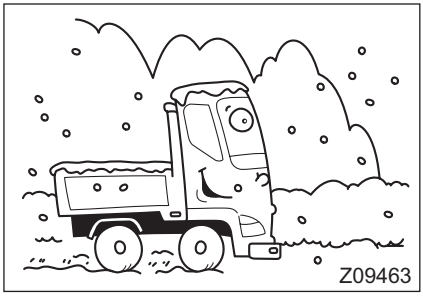
When the 4WD mode is selected, ensure that the free-wheeling hubs on both front wheels are set in the “LOCK” positions. Should either or both of them be in the “FREE” position, four-wheel driving is not possible.

**⚠ WARNING**

- **Never drive with one free-wheeling hub in the "FREE" position and the other in the "LOCK" position. Doing so is very dangerous.**
- **The free-wheeling hub may be extremely hot after driving. Do not touch it.**

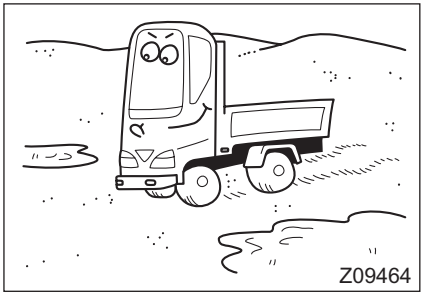
## Advice on use of the 4WD mode

When you select the 4WD mode to drive on off-road terrain (sandy or muddy ground) or snow-laden or frozen roads, take sufficient care to avoid inappropriate operation.


Z09463

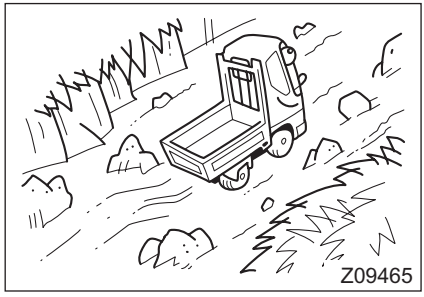
### 1 Driving on snow-covered or frozen roads

Select either the "4WD-LOW" or "4WD-HIGH" mode-range combination according to the snow or road surface condition. Start out slowly.
Tire chains cannot be used on both front and rear wheels. You are advised to use snow or studless tires.


Z09464

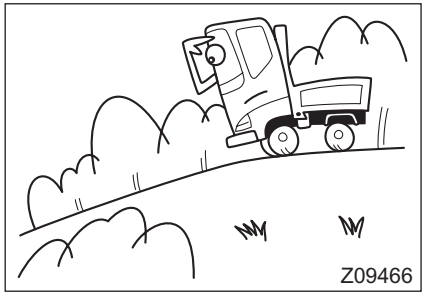
### 2 Driving on sandy or muddy ground

- Select the "4WD-LOW" setting if you find it appropriate to do so after checking sand or mud conditions. Start out slowly. Drive at low speeds, keeping the speed as constant as possible.
- Avoid quick acceleration, sudden braking and sharp turn as they can cause the vehicle to become stuck in the sand or mud, making it impossible to free the vehicle by yourself.
- Muddy conditions are generally difficult to judge and there is danger of becoming stuck in deep mud. To prevent this, drive as slowly as possible and, if necessary, get out of the vehicle and check the conditions.


Z09465

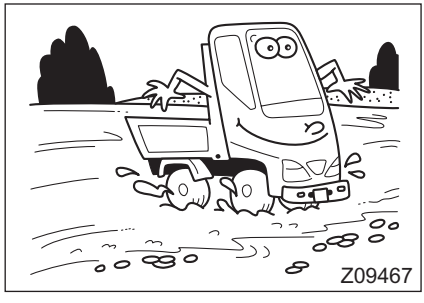
### 3 Climbing steep hills

Select the “4WD-LOW” setting to make full use of engine torque. Choose the path that has the least stones, sand and bumps. At both the start and end of a climb, moderate slopes are preferable.


Z09466

### 4 Descending steep hills

- Select “4WD-LOW” setting and descend slowly using engine braking so that the wheels do not slip.
- Quick braking can slip the wheels and result in a loss of vehicle control. Check road conditions before descending.
- Avoid gear shifting or clutch operation when descending a hill. Select the best gear in advance, and maintain the gear until the end of the descent.


Z09467

### 5 Crossing a river

Although 4WD has many advantageous features, it is not designed for driving in water. If it is absolutely necessary to drive in water, select the “4WD-LOW” setting and drive as described below to get out of water in the shortest possible time.

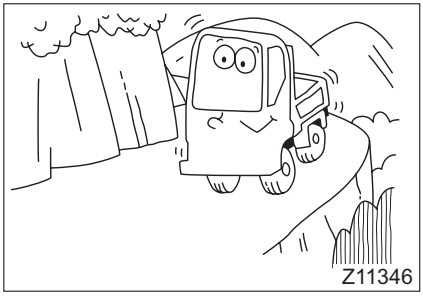
- Choose a path where water is shallowest and drive slowly to avoid making waves.
- After crossing, check the brakes. If the brakes do not operate effectively, drive slowly and lightly depress the brake pedal to dry the brakes while remaining aware of any vehicles in front of or behind you.
- After crossing, check the electric system for any problems that the water may have caused. Also observe the recommendations in the following sub-paragraph describing precautions to be taken when selecting the 4WD mode.

### ⚠ CAUTION

- **Do not drive in water; otherwise water may enter the rear axle or other components.**
- **Never shift gears while crossing a river.**

## Precautions to be taken when selecting the 4WD mode

- In the 4WD mode, you may feel the steering wheel move differently from the way it does in the 2WD mode.
  Operate the steering wheel carefully until you get the complete feel of 4WD operation.


Z11346

- When turning a sharp corner at a low speed in the 4WD mode, a condition resembling one that would occur during braking can develop. This condition called “sharp corner braking” is caused by the fact that the four tires are moving along circles of different radiuses and is a phenomenon limited to 4WD vehicles. It does not imply any abnormal condition exists. If you experience this condition, either straighten steering wheel or switch to the 2WD mode.

### 1 If you have driven in water by necessity

- Immediately check engine, transmission, transfer and differential oil. If the oil looks milky, it is contaminated with water. Be sure to replace it.
  ⇨ P. 7-13
- If water has entered the cab, dry the carpet, etc. Leaving them wet can cause rusting.

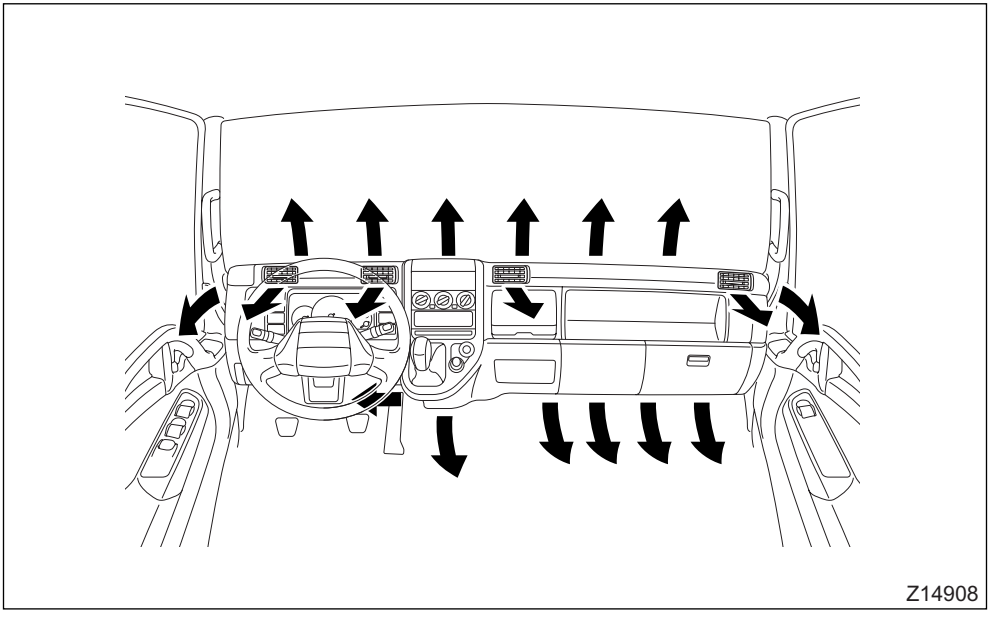
### 2 After off-road driving, be sure to check the following points:

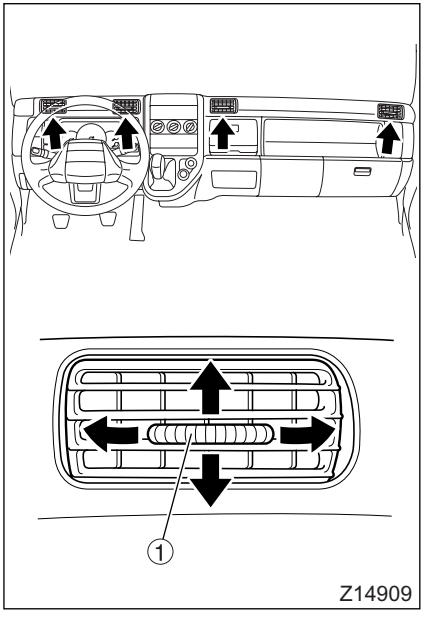
- Check for damage caused by stones, etc.
- Check the brakes. If the brakes function poorly, have them checked by an authorized dealer.
- Grease the propeller shaft and also the front and rear suspension springs. ⇨ P. 12-18

# 9. Heating and air conditioning

Front air outlets ..... 9-2
Heater ..... 9-3
Air conditioner ..... 9-7
Outside air inlets ..... 9-13

## Front air outlets



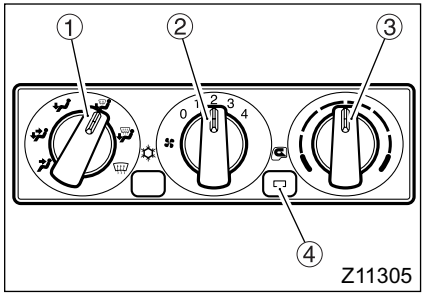




### 1 Adjusting the airflow direction

- Adjust the left/right airflow direction from each outlet as desired by moving the knob ① to the left or right.
- Adjust the up/down airflow direction from each outlet as desired by pressing the top or bottom of the outlet.

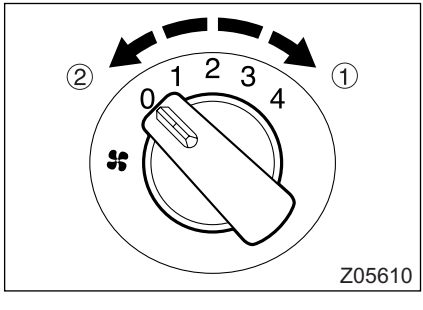
# Heater

*NOTE:*
- *The heater uses the heat produced by the engine coolant. Warm air is, therefore, not available until the coolant temperature becomes sufficiently high.*
- *When heating the cab while the engine is warming up and while the vehicle is parked, turning "ON" the warm-up switch makes the heating more effective.*



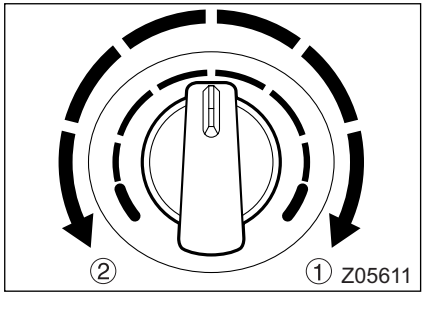

## 1 Using the controls

① Mode selector dial
② Fan speed dial
③ Temperature adjustment dial
④ Air selector switch



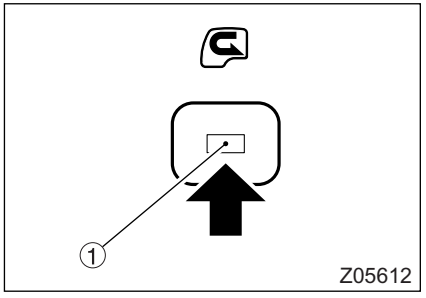

### 1.1 Fan speed dial

The fan speed dial allows you to adjust the fan speed in four steps. Turn the dial in the direction of arrow ① to increase the fan speed and in the direction of arrow ② to reduce it.




### 1.2 Temperature adjustment dial

Turn the dial in the direction of arrow ① to increase the air temperature and in the direction of arrow ② to reduce it.




### 1.3 Air selector switch

Pressing the air selector switch allows you to toggle the setting between recirculation of inside air and introduction of outside air. When recirculation is selected, the indicator lamp ① in the switch comes on.

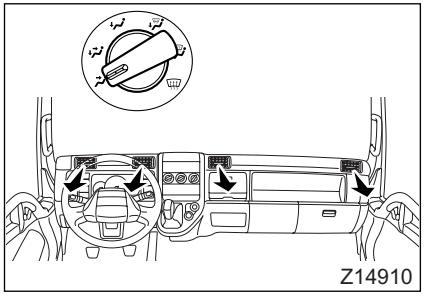
- Outside air
  Use this setting when driving in normal conditions.
- Recirculation
  Use this setting when the outside air is dirty. Using this setting when parking enables you to prevent dust from entering the cab.

## ⚠ CAUTION

**Using the recirculation setting for a long time will cause air to become stale. If this happens, switch to the outside air setting.**

*NOTE:*

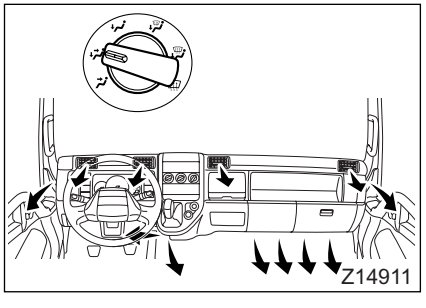
- *Select outside air when driving in normal conditions.*
- *Using the recirculation setting for a long period when humidity is high makes the windows prone to fogging.*



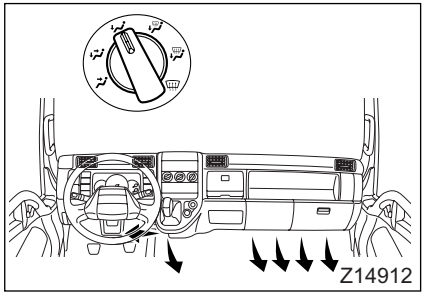

### 1.4 Mode selector dial

Use the mode selector dial to select outlets as desired.

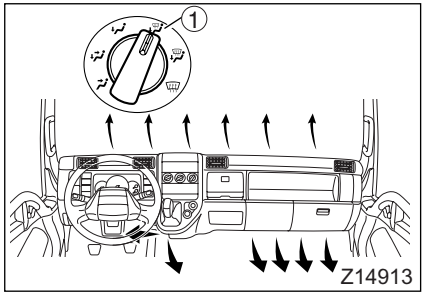
- For airflow toward the upper body
  Place the mode selector dial in the position.




- For airflow toward the upper body and toward the feet
  Place the mode selector dial in the position.

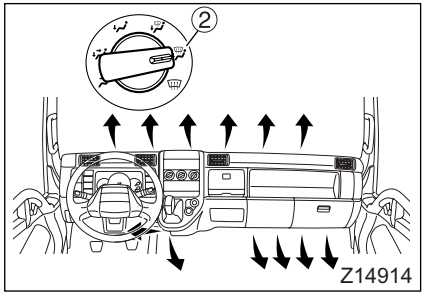



- For airflow toward the feet
  Place the mode selector dial in the position.

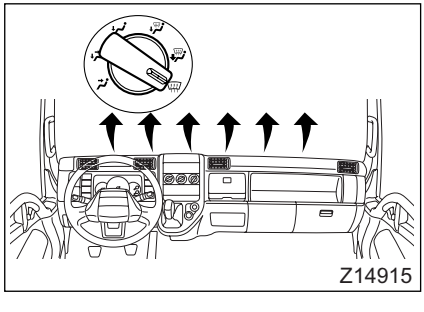



- For airflow toward the feet and toward the windshield

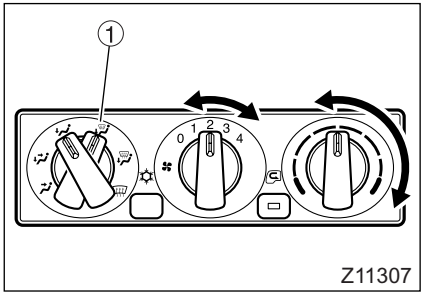
1. With the dial in the position ①, most air is directed toward the feet and the rest of the air is directed toward the windshield.




2. With the dial in the position ②, air is directed equally toward the feet and windshield.



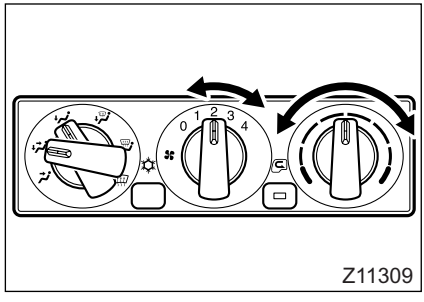

- For airflow toward the windshield
  Place the mode selector dial in the position.




## 2 Using the controls

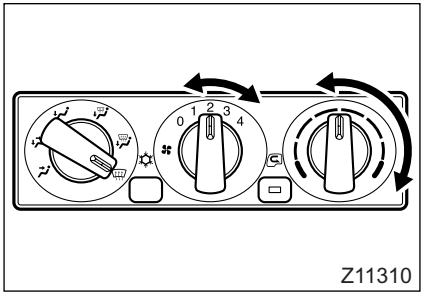
### 2.1 To heat the cab

Place the mode selector dial in the position ① or in the position.



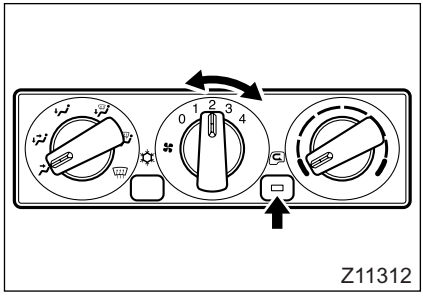

### 2.2 For cool airflow toward the head and warm airflow toward the feet

Place the mode selector dial in the position or in the position.




### 2.3 To defog the windshield

Place the mode selector dial in the position. If you wish to defog the windshield quickly, use the fan speed dial to select the maximum fan speed and use the temperature adjustment dial to select the maximum temperature.




### 2.4 To ventilate the cab

Press the air selector switch to select outside air, and place the mode selector dial in the position.

## 3 Cleaning the air filter

Clean the air filter every 6 months.
A dust-loaded filter may cause malfunction of the blower motor. ⇨ P. 12-81

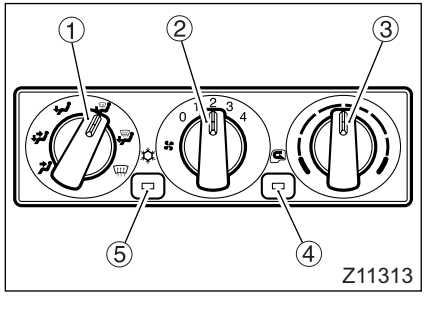
## Air conditioner OPT

**⚠ WARNING**

**Never leave children alone in the cab especially when the air-conditioning is on. They will suffer from dangerously high interior temperatures should the air conditioning accidentally stop.**

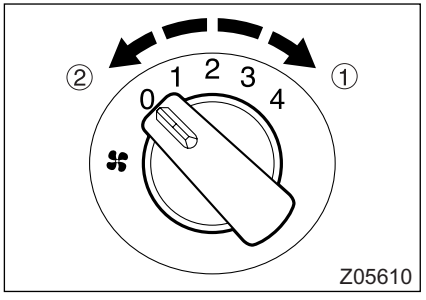
*NOTE:*

- *The heater uses heat produced by the engine coolant. Warm air is, therefore, not available until the coolant temperature becomes sufficiently high.*
- *When heating the cab while the engine is warming up and while the vehicle is parked, turning "ON" the warm-up switch makes the heating more effective.*
- *When you perform the manual DPF regeneration, the engine compartment temperature will rise, probably causing the air conditioning system to stop. You may then feel reduced air conditioning performance, but this does not indicate any abnormality. The air conditioning system will automatically restart functioning normally as soon as the engine compartment temperature drops to a normal temperature following the termination of the DPF regeneration.*
- *In some vehicles, a fast idling device increases the engine's idling speed slightly when the air conditioner is used.*



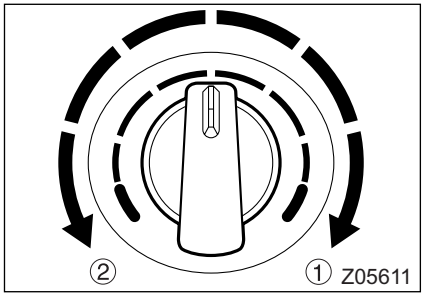

### 1 Using the controls

① Mode selector dial
② Fan speed dial
③ Temperature adjustment dial
④ Air selector switch
⑤ Air conditioner switch



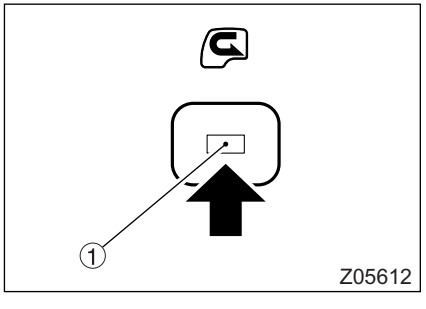

### 1.1 Fan speed dial

The fan speed dial allows you to adjust the fan speed in four steps. Turn the dial in the direction of arrow ① to increase the fan speed and in the direction of arrow ② to reduce it.




### 1.2 Temperature adjustment dial

Turn the dial in the direction of arrow ① to increase the air temperature and in the direction of arrow ② to reduce it.




### 1.3 Air selector switch

Pressing the air selector switch allows you to toggle the setting between recirculation of inside air and introduction of outside air. When recirculation is selected, the indicator lamp ① in the switch comes on.

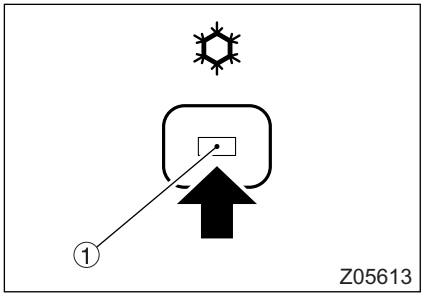
- Outside air
  Use this setting when driving in normal conditions.
- Recirculation
  Use this setting when the outside air is dirty. Using this setting when parking enables you to prevent dust from entering the cab.

## ⚠ CAUTION

**Using the recirculation setting for a long time will cause air to become stale. If this happens, switch to the outside air setting.**

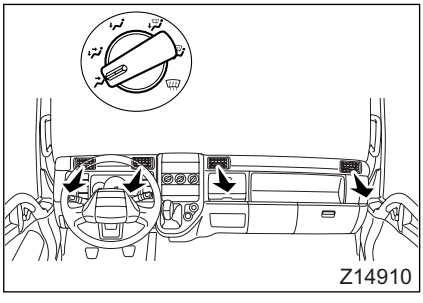
*NOTE:*

- *Select outside air when driving in normal conditions.*
- *Using the recirculation setting for a long period when humidity is high makes the windows prone to fogging.*




### 1.4 Air conditioner switch

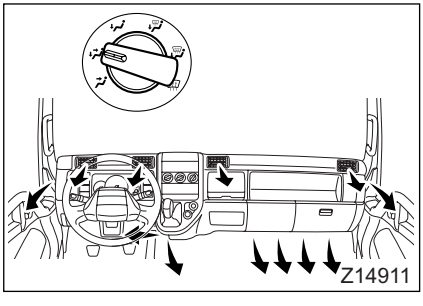
Pressing the air conditioner switch activates the air conditioner, which has cooling and dehumidifying functions. The indicator lamp ① in the switch comes on at this time. Pressing the air conditioner switch once more stops the air conditioner.



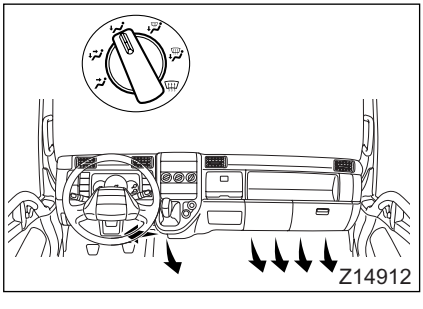

### 1.5 Mode selector dial

Use the mode selector dial to select outlets as desired.

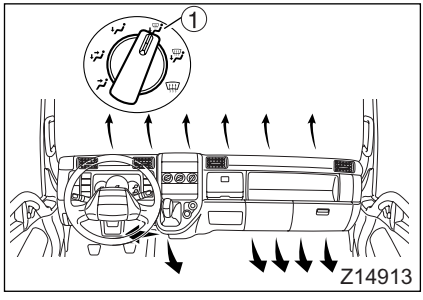
- For airflow toward the upper body
  Place the mode selector dial in the position.




- For airflow toward the upper body and toward the feet
  Place the mode selector dial in the position.

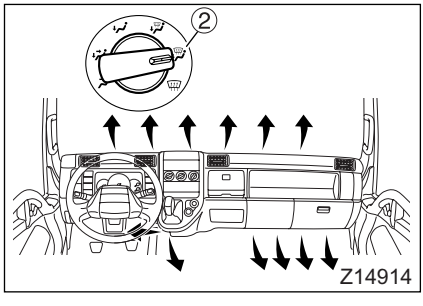



- For airflow toward the feet
  Place the mode selector dial in the position.

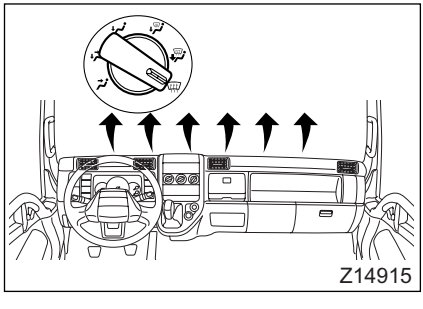



- For airflow toward the feet and toward the windshield

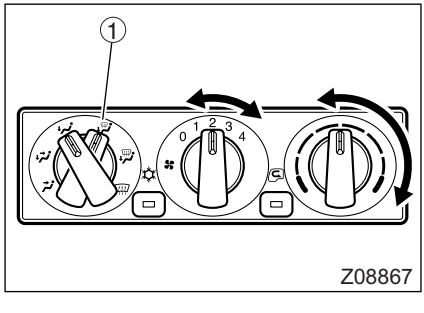
1. With the dial in the position ①, most air is directed toward the feet and the rest of the air is directed toward the windshield.




2. With the dial in the position ②, air is directed equally toward the feet and windshield.



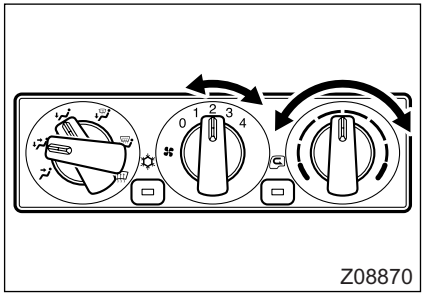

- For airflow toward the windshield
  Place the mode selector dial in the position.




## 2 Using the controls

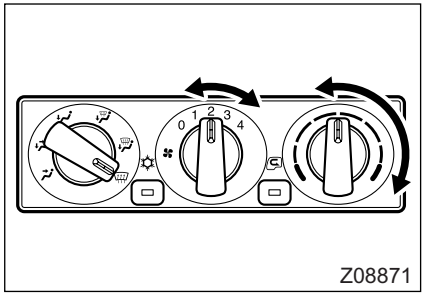
### 2.1 To heat the cab

Place the mode selector dial in the position ① or in the position.



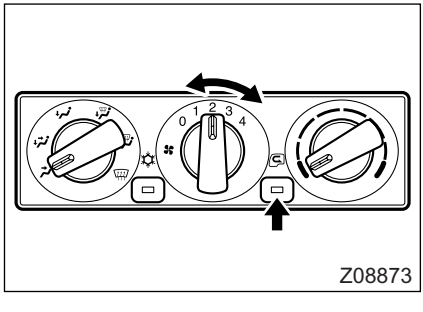

**2.2 For cool airflow toward the head and warm airflow toward the feet**

Place the mode selector dial in the position or in the position.



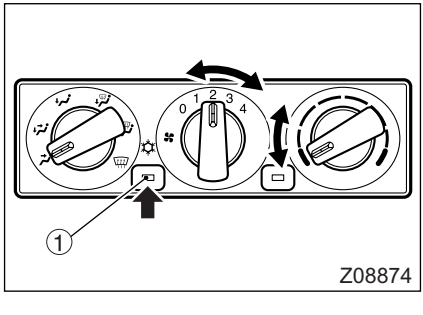

**2.3 To defog the windshield**

Place the mode selector dial in the position. If you wish to defog the windshield quickly, use the fan speed dial to select the maximum fan speed and use the temperature adjustment dial to select the maximum temperature.



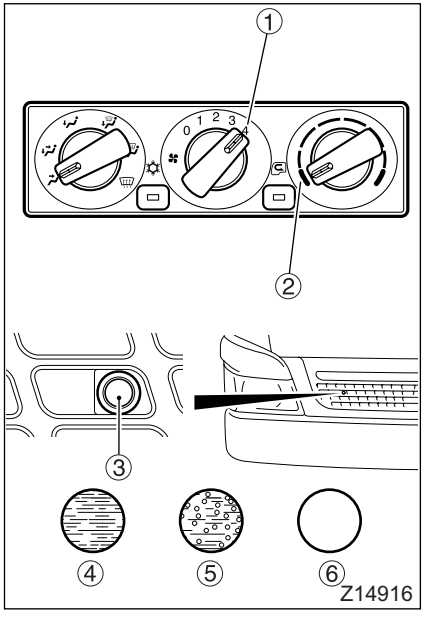

**2.4 To ventilate the cab**

Press the air selector switch to select outside air, and place the mode selector dial in the position.




**2.5 To cool the cab**

Press the air conditioner switch to activate the air conditioner, then use the temperature control dial to set a comfortable temperature. The indicator lamp ① will be illuminated while the air conditioner is operating.




### 3 Checking the refrigerant level

If refrigerant is insufficient, the cooling efficiency will be diminished. Therefore, check the refrigerant level from time to time. Run the air conditioner so it gives maximum cooling performance (place the fan speed dial in the position ① and the temperature adjustment dial in the position ②). Observe the receiver's inspection window ③ through the grille. Check for the presence of bubbles. The refrigerant is sufficient if no bubbles are visible through the glass when the air conditioner is being operated. If bubbles are visible, the amount of refrigerant is insufficient. You can have your system charged at your nearest authorized dealer.

④ Insufficient refrigerant
⑤ Refrigerant level normal
⑥ Excessive refrigerant, or no refrigerant
If you observe condition ⑥ and the air conditioner cools the cab poorly, have the air conditioner inspected by an authorized dealer.

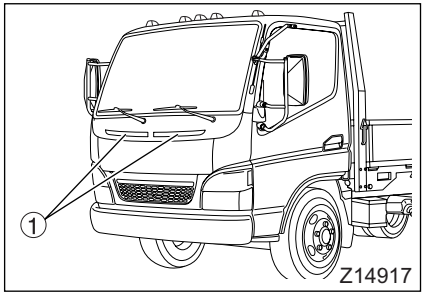
### ⚠ CAUTION

- **Running the air conditioner without refrigerant will damage the air conditioner compressor. Check the refrigerant level if the air conditioner stops working efficiently.**
- **To protect the environment, your vehicle's air conditioning system uses refrigerant HFC-134a which does not harm the ozone layer.**
  **Since charging the system with this refrigerant requires a method different from the conventional method, be sure to contact your nearest authorized dealer if your system needs to be serviced.**
- **Using any refrigerant other than the HFC-134a will cause a malfunction of the air conditioning system. Be sure to use only the HFC-134a.**

*NOTE:*
*Do not release refrigerant into the atmosphere. When necessary because of servicing or scrapping of the vehicle, consult the nearest authorized dealer in order to have the refrigerant properly removed.*

### 4 Cleaning the air filter

Clean the air filter every 6 months.
A dust clogged air filter may cause a poor air conditioning performance and blower motor malfunction.
⇨ P. 12-81




## Outside air inlets

- Make sure the outside air inlets ① are not covered or otherwise obstructed. Remove any object that is covering or otherwise obstructing them. Unless the inlets are unobstructed, air will not flow smoothly from the outlets when outside air is selected.
- Do not directly apply steam from a cleaner to the outside air inlets. Water could enter the cab, and the wiper motor could malfunction.

# 10. Interior equipment and accessories

Cigarette lighter ..... 10-2
Ashtrays ..... 10-3
Coat hooks ..... 10-4
Sun visors ..... 10-4
Interior lamp ..... 10-4
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Using the radio ..... 10-8
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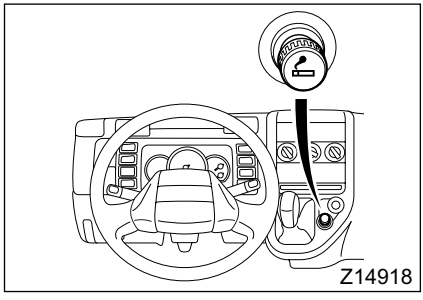

Z14918

## Cigarette lighter

The cigarette lighter can be used when the starter switch is in the “ON” or “ACC” position.
Push the cigarette lighter all the way in. It will soon pop back to the original position with its core red hot. Pull out and use.

### ⚠ WARNING

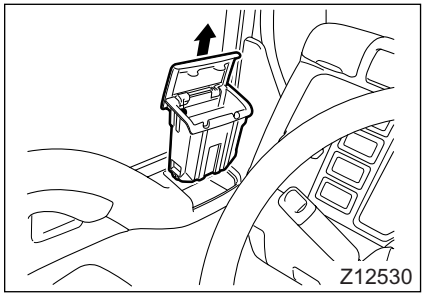
- **Do not hold the cigarette lighter in the pushed-in position since the wiring could burn out and start a fire.**
- **Something is wrong with the lighter if it does not pop out within approx. 30 seconds. If this should happen, pull it out manually and have the lighter inspected by an authorized dealer. Leaving the lighter unremoved in the socket could cause a fire.**
- **Do not leave your vehicle with the cigarette lighter pushed in. Doing so could result in a fire.**
- **Do not allow a child to touch the cigarette lighter. The child could get burned.**
- **Do not touch the metallic parts of the cigarette lighter. You could get burned.**
- **Never use a cigarette lighter from another vehicle. Your vehicle’s cigarette lighter is designed for a 12 V power supply. Do not use a 24 V cigarette lighter.**
- **Do not use a deformed cigarette lighter. If deformed, the lighter will not pop out properly. Use of an improper lighter also causes trouble. Be sure to use genuine lighters or equivalents as replacements.**
- **Do not use electric devices designed to be plugged into the cigarette lighter socket, as this could overload the circuitry and overheat the wiring, possibly causing a fire. This could also damage the inside of the cigarette lighter socket.**

## Ashtrays

Remove and empty the ashtrays when they become full.

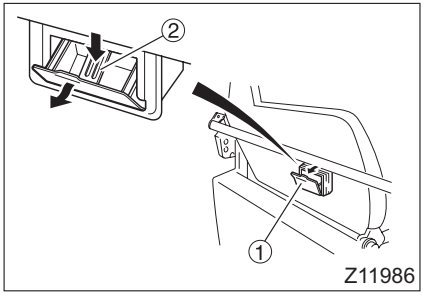
**⚠ WARNING**

- **Be sure to put out cigarettes and matchsticks before putting them in the ashtrays. Close ashtrays completely.**
- **Put only cigarette stubs and matchsticks in the ashtray. Empty the ashtray before it becomes full completely as too many stubs crammed into the ashtray could catch fire.**
- **Do not throw cigarette ends out of the windows since this is environmentally irresponsible and could start a fire.**
- **When cleaning the ashtray, do not strike it with a hard object since it could break. If the ashtray breaks, stop using it and replace it with a new one. Using a broken ashtray could cause a fire.**



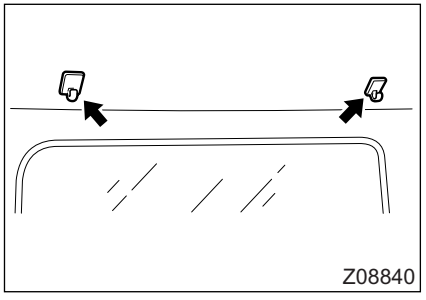

### 1 Driver's door ashtray and assistant driver's door ashtray

- Raise the lid to use the ashtray.
- When you wish to empty the ashtray, hold the lid and pull the entire ashtray upward to remove it.




### 2 Rear ashtray in crew-cab model

- Pull the lid of the ashtray ① toward you for use.
- When you wish to empty the ashtray, push down the stopper ② and pull the ashtray out toward you.
- To refit the ashtray, insert its bottom into the groove then hold down the spring and push the ashtray into place.

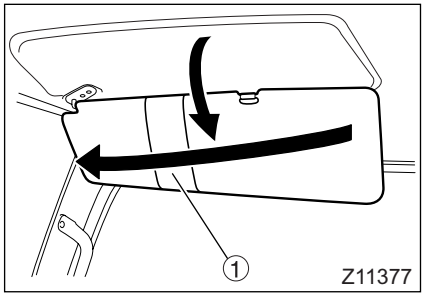

Z08840

## Coat hooks

<Vehicles other than Crew-cab models>
Use the coat hooks if you wish to hang up clothing or similar items.

### ⚠ CAUTION

**Do not pull the coat hooks with excessive force or hang heavy items on them. They could break.**



Z11377

## Sun visors

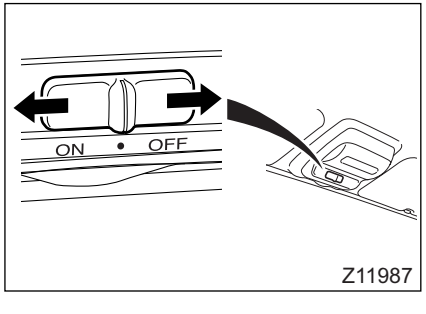
The sun visor screens your eyes from sunlight. Change its angle as needed. Unhook the inside edge of the sun visor and swing it sideways to reduce glare from the side. There is a ticket holder ① on the back of the driver's sun visor.

## Interior lamp

The interior lamp(s) can be used with the starter switch in any position.

### ⚠ CAUTION

**Leaving an interior lamp illuminated for a long time with the engine not running can drain the battery to such an extent that the engine cannot be started. Always turn off the lamps before you leave the vehicle.**

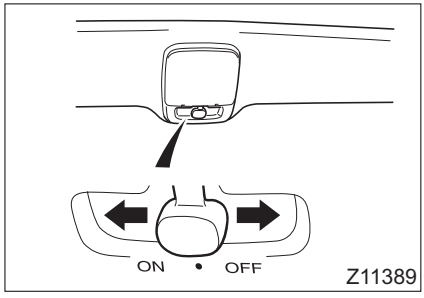


Z11987

### 1 Interior lamp

**1.1 Other than Crew-cab models**

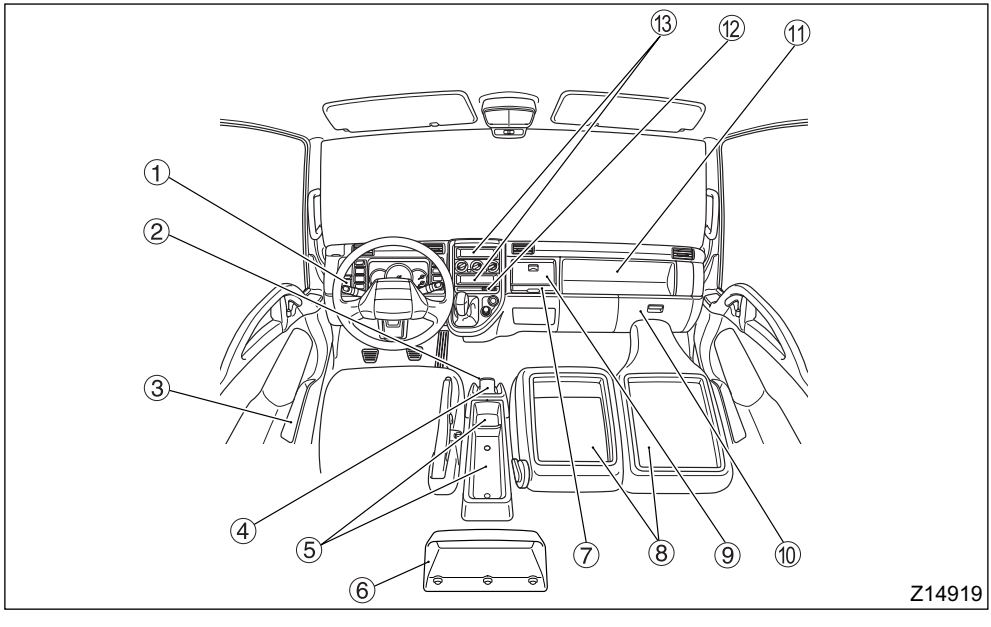
- **"ON" position**
  The lamp is illuminated regardless of the door positions.
- **"•" position**
  The lamp comes on when a door is opened and goes off when the door is closed.
- **"OFF" position**
  The lamp is off regardless of the door positions.




**1.2 Crew-cab models (front and rear seats)**

- **"ON" position**
  The lamp is illuminated regardless of the door positions.
- **"•" position**
  The lamp comes on when a door is opened and goes off when the door is closed.
- **"OFF" position**
  The lamp is off regardless of the door positions.

## Small article compartments



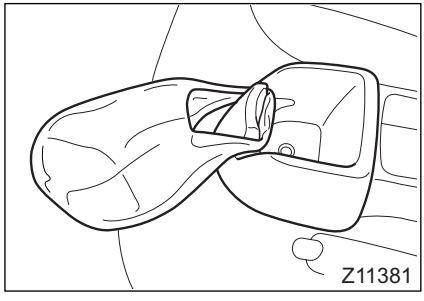

**⚠ WARNING**

**Always close the glove compartment before operating the vehicle.**
**If left open, their covers could cause injury in the event of a collision or sudden stop.**

## ⚠ CAUTION

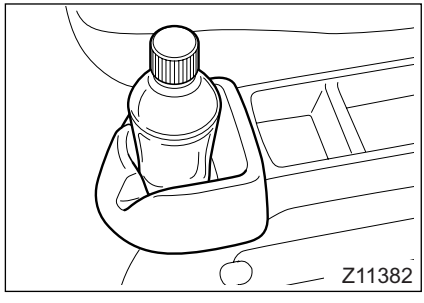
- **Fuses, relays, and other electrical items are located below the glove compartment ⑨ and tray ⑪. Do not splash water on the glove compartment and tray, and do not put wet objects in them.**
- **Do not use the console and tray to hold items that are prone to rolling while the vehicle is moving. Such items could create a hazard by impeding driving.**

① **Vertical compartment**


Z11381

② **Hook**
<Vehicles other than Crew-cab models>

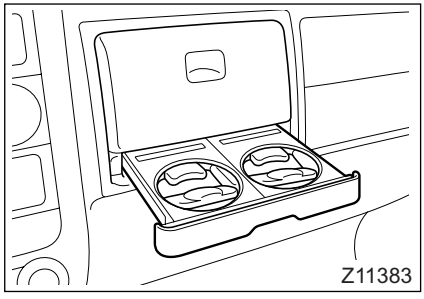
③ **Door pocket**
<Vehicles other than Crew-cab models>


Z11382

④ **Center tray**
<Vehicles other than Crew-cab models>

⑤ **Center console box**
<Vehicles other than Crew-cab models>

⑥ **Back panel console box**
<Vehicles other than Crew-cab models>




⑦ **Cup holder**
Pull out the cup holders to use them. Keep them pushed in when they are not being used.

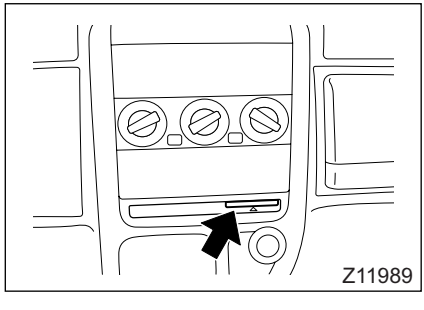
**⚠ WARNING**
- **The contents in a cup or can held in the cup holder may spill during movement of the vehicle. Be careful of scalding if they contain hot beverages.**
- **A fusebox is located below the cup holder. Be careful not to splash drinks on the fusebox cover. If you accidentally splash a drink on the fusebox cover, check that the drink has not seeped into the fusebox.**

⑧ **Seatback trays**
<Vehicles other than Crew-cab models>
The assistant driver's seat and center seat each have a seatback tray. Each tray can be used with the relevant seatback folded forward.

⑨ **Glove compartment**

⑩ **Glove compartment**

⑪ **Tray**




⑫ **Card holder**
The card holder can be used to hold express-way tickets and similar items.

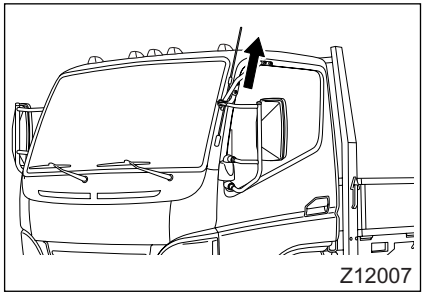
⑬ **Pocket**
The pocket may be used as a radio or other audio equipment mounting space.

## Using the radio

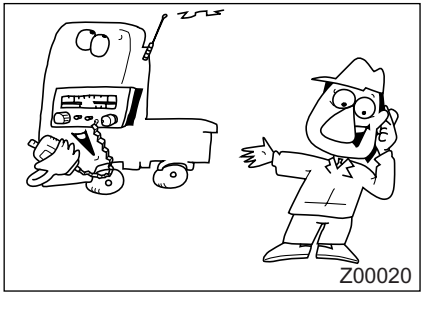
The radio (optional) can be used with the starter switch in the “ON” position or “ACC” position.

### ⚠ CAUTION

**Using the radio for an extended period without the engine running could drain the battery.**


Z12007

- Extend the antenna before using the radio. Retract the antenna when it is likely to cause an obstruction, for example, when tilting the cab.


Z00020

## Accessories

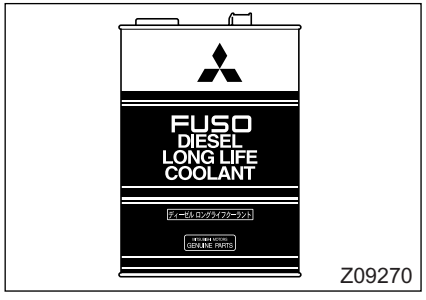
- See an authorized dealer if you are considering adding accessories to your vehicle.
- Your vehicle contains electronic devices. Even though these are protected against interference from electromagnetic emissions, you should refer to an authorized dealer before fitting equipment that emits strong signals, such as mobile telephones.

### ⚠ WARNING

**To avoid the risk of overheating/fire or faulty operation, have electrical accessories connected by an authorized dealer. Never connect them yourself.**

# 11. In cold weather

Coolant ..... 11-2
Engine oil ..... 11-2
Fuels ..... 11-3
Other recommendations for cold weather operation ..... 11-3
Installing tire chains ..... 11-4



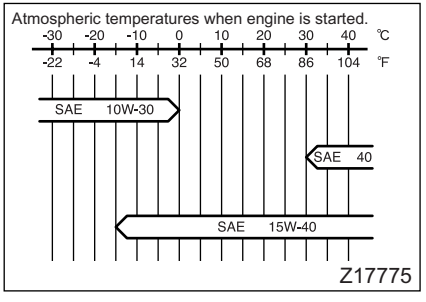
Z09270

## Coolant

- When vehicles are shipped from the factory, genuine FUSO DIESEL LONGLIFE COOLANT is added to the coolant in their cooling systems. This additive combines both antifreeze and anti-rust capabilities to sufficiently protect the cooling system from freezing up. However, for added safety, it is recommended that you have an authorized dealer check that the coolant has a proper concentration of the additive before winter begins.
- Be sure to use coolant added with the FUSO DIESEL LONGLIFE COOLANT or equivalent to the recommended concentration. ⇨ P. 12-46

### ⚠ CAUTION

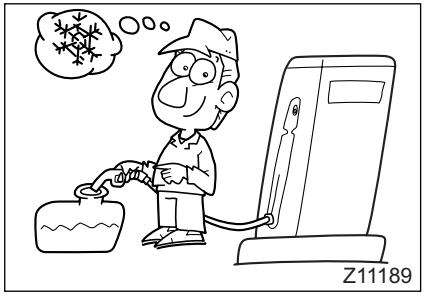
**Never mix FUSO DIESEL LONGLIFE COOLANT with other brands of anti-freeze or anti-corrosion additives since these can detract from its performance. If a different coolant additive has been used and the FUSO DIESEL LONGLIFE COOLANT is to be used, be sure to thoroughly flush the cooling system.**



Z17775

## Engine oil

The viscosity of the engine oil increases in cold temperatures, sometimes making it hard to start the engine, especially early in the morning. Therefore, use an engine oil of a viscosity which suits the weather conditions. ⇨ P. 12-22




## Fuels

Ordinary diesel fuel gels in freezing temperatures, making it impossible to start the engine.
If you are bound for a cold area, it is recommended that you fuel your vehicle so that it burns more than half the fuel by the time you reach your destination. This allows you to refuel with a grade of diesel fuel appropriate to the colder weather conditions.
⇨ P. 1-5

## Other recommendations for cold weather operation

- If the engine fails to start, turn the starter switch back to the “ACC” position or “LOCK” position and wait for the battery to recover before trying to start the engine again.
- As the temperature falls, battery performance decreases. Check the battery electrolyte level and its specific gravity. ⇨ P. 12-78
- In cold weather, use a windshield washer fluid additive in the concentration indicated by the manufacturer’s instructions.

### ⚠ CAUTION

**Do not use engine coolant or antifreeze since these would damage the vehicle’s paint.**

- Occasionally check the undercarriage and fender wells, and if necessary remove snow and ice taking care not to damage vehicle parts as you do so.
- The brakes may be frozen up when the vehicle is driven on snow-laden roads or during parking in cold weather. Since frozen brakes are sluggish to function, drive your vehicle carefully while paying attention to vehicles behind as well as in front and checking normal function of the brakes from time to time by slightly depressing the brake pedal. If the brakes are sluggish, depress the brake pedal repeatedly while driving at a low speed until normal braking returns.
- When parking your vehicle, select a site not directly exposed to wind or snow and face it away from the wind.

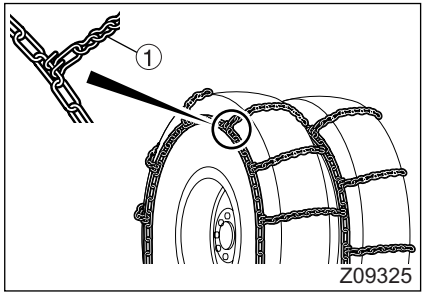
- Do not apply the parking brake in extremely cold conditions that could cause it to freeze up and become impossible to release. In such conditions, take the following steps:
  1. Stop the vehicle and pull the parking brake lever. Never park on a slope.
  2. In a manual transmission vehicle, select first gear or reverse.
     In an automatic transmission vehicle, put the range selector lever in the “P” position.
  3. Block the wheels securely with chocks.
  4. Release the parking brake lever.
- On vehicles with air conditioner, operate the air conditioner at least once a month to maintain its functions even during the cold season when it is not being used.

## Installing tire chains

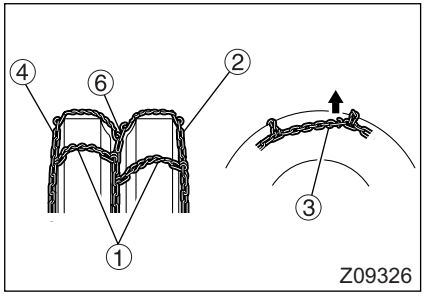
<Vehicles other than FG models>
- On FG models, tire chains cannot be used on both front and rear wheels.
- Make sure that tire chains are installed properly so that they do not become loose and interfere with other vehicle parts while the vehicle is in motion.
- Use triple chains corresponding to tire size.

### ⚠ CAUTION

- **Do not use chains on the front wheels on FE; instead, use of snow tires is recommended.**
- **When fitting tire chains, refer to the instructions supplied with them.**
- **Drive at low speeds, desirably at speeds lower than 30 km/h (19 mph), when chains are installed on wheels.**
- **Driving on a dry road with chains installed may damage the chains as well as the road surface. Avoid doing so as far as possible.**
- **Make sure that the chains and their spring bands are not excessively worn or otherwise damaged.**
- **If you hear an abnormal noise while driving, stop the vehicle in the nearest safe place and check the tire chains.**

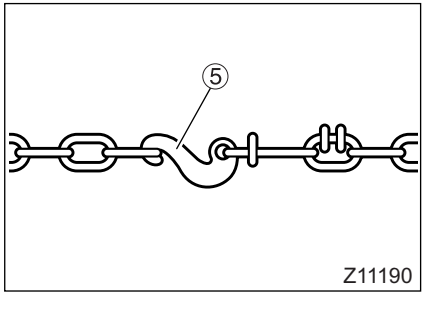



1. Place the chains over the tires with the hook ends of cross chains ① facing outward.

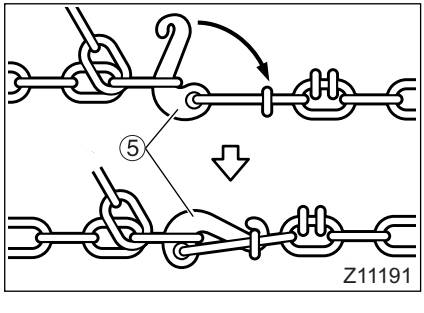



2. Connect the hook ③ of inside chain ②, leaving no excess links. Then, take up the slack in the inside chain by pulling cross chains ① for the inside tire outward.

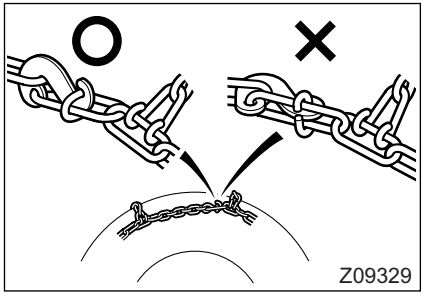
*NOTE:*
*Pull the hook section outward to the possible maximum extent.*



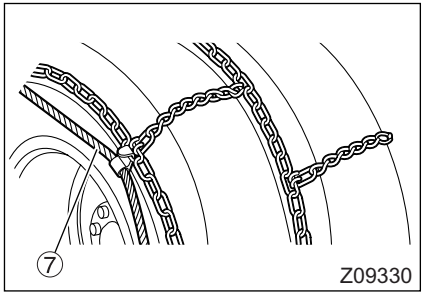

3. Temporarily connect hook ⑤ of outside chain ④ as shown.




4. Pull the middle chain ⑥ as far as possible and connect its hook.
5. Pull both ends of outside chain ④ as far as possible and connect hook ⑤.




6. Ensure that hooks ③ and ⑤ are flat on the tire sidewalls. Also make sure that the chains are not twisted.
7. Fasten extra chain links with a metal wire to prevent them from hitting against other vehicle parts.




8. Fit spring band ⑦. Attach the hooks of spring band on the chain at even intervals with the hook ends facing outward.
9. After driving the vehicle for 5 to 10 minutes, check the chains for looseness or disconnected hooks.

# 12. Simple inspection and service

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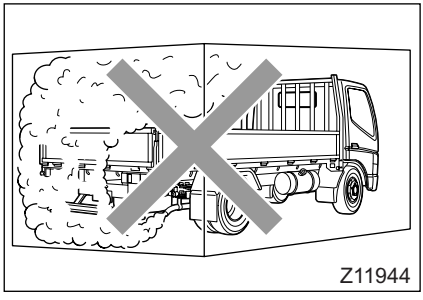
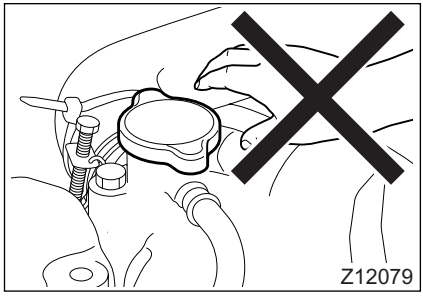
## General precautions for servicing the vehicle




### ⚠ WARNING

- **Never run the engine in a poorly ventilated area. Exhaust emissions contain carbon monoxide, which can cause unconsciousness or death if breathed.**
- **Never smoke when servicing your vehicle since its fuel and the gases given off by its battery are highly flammable.**
- **When tilting the cab, carefully follow the instructions in this manual. Be sure to fit the stopper into the notch in the lock lever to prevent the cab from dropping.**
  **After letting the cab down, check that it is locked securely in position. (Vehicles other than Crew-cab models)** ⇨📖 **P. 12-6**
- **The engine gets extremely hot when running and stays hot for some time after being turned off. To avoid being burned, do not touch the engine, exhaust manifold, radiator, exhaust pipe, or other engine-related parts until they have cooled down.**
- **Do not loosen the engine pressure cap while the engine is hot. Wait for the engine to cool down, then grip the cap with a cloth and turn it slowly to release the internal pressure before removing it completely.**
- **Never crawl under the vehicle when it is supported only by a hydraulic jack since the jack could slip out of position and cause the vehicle to crush you.**
- **The battery cables and starter cables carry extremely high voltages. Be careful not to short-circuit them, e.g., with a tool, since this could cause serious injury.**
- **Take great care when working near the fan and fan belt. Never touch them when they are moving.**
- **Be careful not to hurt yourself on the corners of the body when performing inspections.**
- **The oil cooling fan in an automatic transmission vehicle switches on automatically when the fluid temperature becomes high. Keep your hands and tools clear of it.**
- **Keep oily rags and other flammable items in a safe place.**

**⚠ WARNING**

- **Put away all tools and rags after use. Items left in the engine bay could get hot and catch fire.**

Please take the following precautions when servicing your vehicle:

- Make sure the vehicle is on safe, level ground.
- Prevent the vehicle from moving by pulling the parking brake lever and blocking the wheels with chocks.
- Remove the starter key unless you need to run the engine.
- Take off wristwatches, rings, and neckties, and wear clothing that will not obstruct movement or snag on parts of the vehicle.
- Wear all safety gear necessary for your task, for example, hard hat or goggles.
- Use the correct tools for your task.
- Do not make adjustments or repairs unless you know exactly what you are doing. For servicing that is difficult or not shown in this manual, take your vehicle to an authorized dealer.
- When servicing electrical equipment, disconnect the negative terminal (–) of the battery.

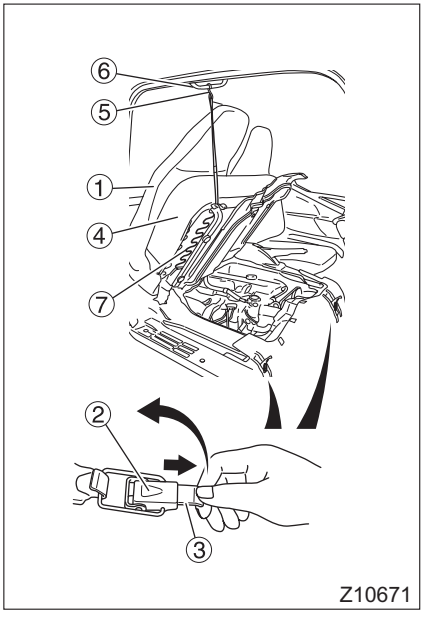
**⚠ CAUTION**

- **Replace filters and filter elements regularly. Blocked or damaged filters and elements can reduce the engine's power and impair its operation. Always use genuine parts for replacements. Also, oils and greases should be those recommended in this manual. Use of non-genuine parts, or oil and grease not recommended, may lead to failures.**

**⇨ P. 14-3**

- **When replacing the oil or coolant, be sure to have a container suitable for catching drained fluid ready.**
- **Dispose of drained oil and coolant in the specified manner. Disposing of them irresponsibly could cause environmental harm.**
- **The DPF contains a catalytic converter. Do not kick or knock the DPF since the inside catalyst and ceramic filter could be damaged.**

  **Water collecting in the DPF is slightly acidic and should not be touched. If you touch this water, rinse it off under a faucet.**




## To reach the engine access opening

<Crew-cab models>
There is an opening under the assistant driver's seat which provides access to the engine for inspection and servicing.
Uncover and cover the opening as follows:

- To uncover the opening

1. Tip the seatback ① forward.
2. Fold back the floor mat. Release the two clamps ② by pulling the handle ③ down and then turning it up while still pulling it, holding only the end of the handle.
3. Raise the seat cushion ④, then release the retaining hook ⑤ on the bottom of the seat cushion.
4. Attach the retaining hook to the grip ⑥ beside the assistant driver's seat to hold the seat in place.

- To cover the opening

1. Remove the retaining hook from the grip while supporting the seat cushion to prevent it from dropping.
2. Attach the retaining hook to the S-spring ⑦ on the bottom of the seat cushion to hold the hook in place.
3. Gently lower the seatback and seat cushion, then fasten the clamps to retain it.
4. Return the floor mat and seatback to their original positions.

### ⚠ CAUTION

- **Be careful not to trap the seat belt or floor mat when lowering the seat cushion.**
- **Securely retain the seat cushion with the clamps.**

## Tilting the cab

<Vehicles other than Crew-cab models>

*NOTE:*
*A Crew-cab cannot be tilted.*

### 1 Preparation

**⚠ WARNING**

- **Before tilting or lowering the cab, make sure that the area around the cab is clear of people and obstructions.**
- **Never tilt the cab when the vehicle is on any kind of slope. The cab will move too quickly under the effect of inertia if it is tilted on a slope, possibly causing damage to various vehicle components. Doing so is dangerous as the hook may not engage completely when the cab is lowered.**
- **Never tilt the cab with persons inside.**
- **The cab can drop suddenly if it has heavy objects inside or is fitted with a roof deck. You should be sufficiently aware of this for your safety.**
- **Do not touch the steering wheel, gearshift lever, parking brake lever, or any other control in the cab while the cab is tilted.**

- Park the vehicle on a flat and level surface and stop the engine.
  Tilting the cab on a slope is dangerous since the cab could swing up unexpectedly. This could also damage the mechanism because of the huge, sudden stresses on it.
- Prevent the vehicle from moving by pulling the parking brake lever and blocking the wheels with chocks.
- In a manual transmission vehicle, put the gear shift lever in the neutral position.
  In an automatic transmission vehicle, put the range selector lever in the “P” position.
- Remove water or other liquids from inside the cab before tilting.
- Loose items left in the cab could fall and break the windshield or other equipment. Take out or safety stow all loose items before tilting the cab. Any objects on the roof must be removed.
- Close both doors completely.

- Before tilting the cab, make sure there is adequate clearance in front of the cab and above it.

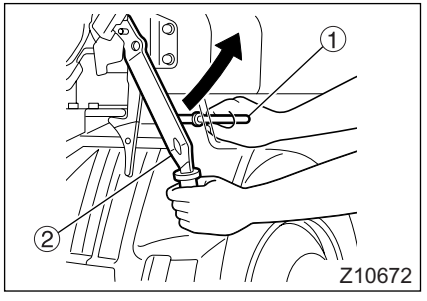
| | |
|---|---|
| Clearance in front | 1 m or more (3.3 ft. or more) |
| Clearance above | 1 m or more (3.3 ft. or more) |

If there are any obstructions within the clearance areas shown above, remove them.
- Retract the radio antenna.

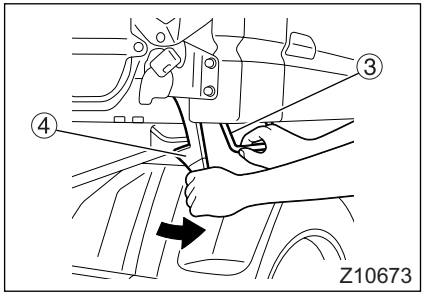
### 2 Tilting the cab

**⚠ CAUTION**

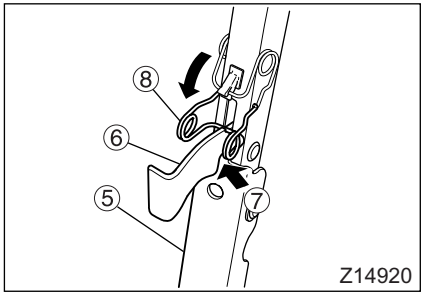
**Raise the cab gently. Raising it quickly with great force could damage the cab tilt mechanism.**




1. Pull lever A ①. With lever A still pulled, pull up lever B ②.




2. Grasp tilt grip ③ and pull lever C ④. The cab will rise slightly.




3. Hold the tilt grip to raise the cab. After confirming that the end of cab stay ⑤ engages with the notch ⑦ of the lock lever ⑥ and the cab stay is secured, insert the stopper ⑧ into the notch of the lock lever.

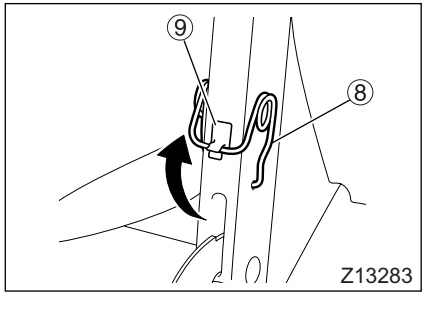
**⚠ WARNING**

**Be sure to fit the stopper into the notch in the lock lever to prevent the cab from dropping.**

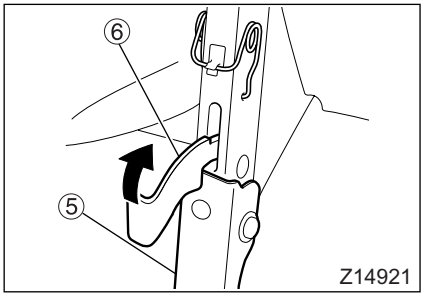
### 3 Lowering the cab

**⚠ WARNING**

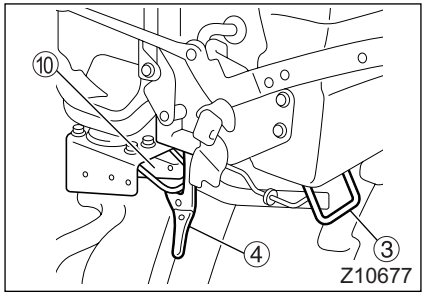
- **Be careful not to trap your hands or other body parts.**
- **Before lowering the cab, make sure that you have not left rags, tools, etc. in the engine compartment. Flammable objects left inside the engine compartment can cause fires.**
- **The cab could come down too quickly if there are heavy objects inside or on the roof deck. Always lower the cab slowly while supporting it.**
- **Hold the cab tilt grip when lowering the cab. Holding the lever B or any other part when lowering the cab could result in damage.**
- **When you have unlocked the cab stay, move your hands away from the lever. The cab stay will tip toward the rear of the vehicle, so your hands could otherwise get trapped.**



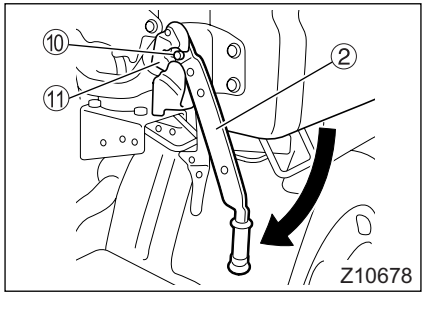

1. Release the stopper ⑧ and retain it in the clip ⑨.




2. Hold the tilt grip to support the cab. Lift the lock lever ⑥ and fold the cab stay ⑤.



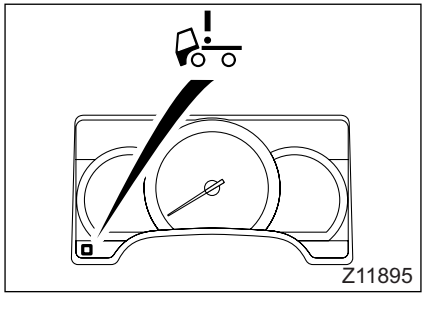

3. Still holding the tilt grip ③, lower the cab until the hook on lever C ④ engages with the cab mount ⑩.




4. Push down lever B ② until the pin ⑩ engages with the latch ⑪. Check that lever B cannot be pulled up.

**⚠ WARNING**

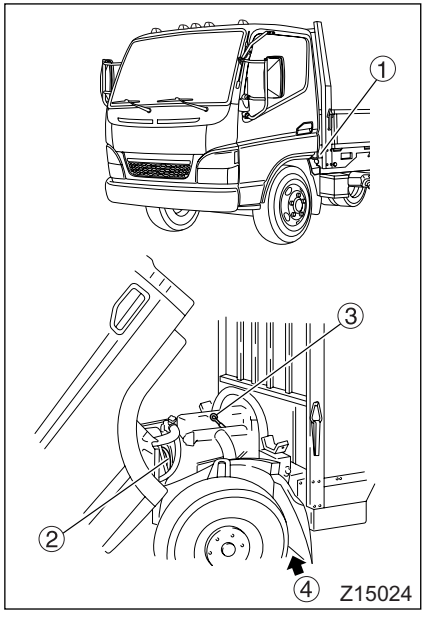
**If the lever B cannot be pushed down, tilt up the cab again and repeat the lowering procedure from the beginning.**



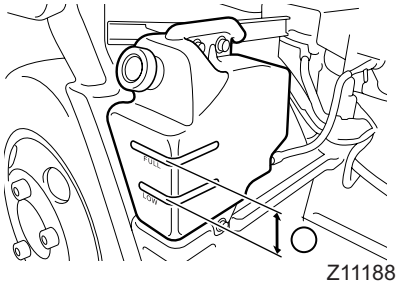
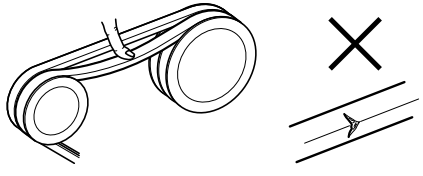
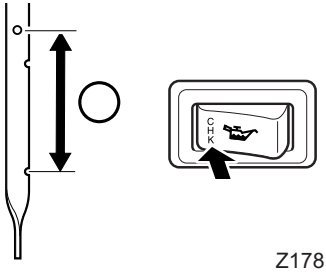
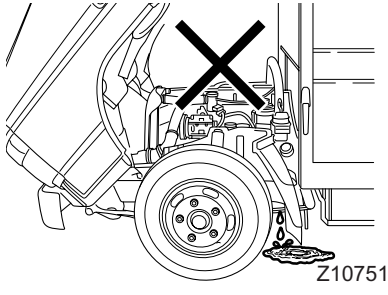

5. Turn the starter switch to the “ON” position, and make sure that the warning lamp is not lit.
   If the warning lamp lights and the buzzer sounds, the cab is not locked completely. If this happens, tilt up the cab, lower it, and lock it again.

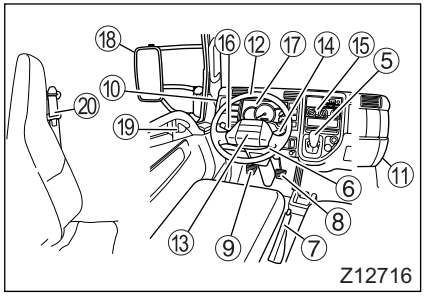
## Pre-operational checks

Be sure to perform the pre-operational checks for the items listed below at the start of each day's operation in order to ensure safe and comfortable driving. If you find anything unusual which you are unable to repair yourself, you should have this corrected at an authorized dealer before operating the vehicle.




### 1 Before starting the engine

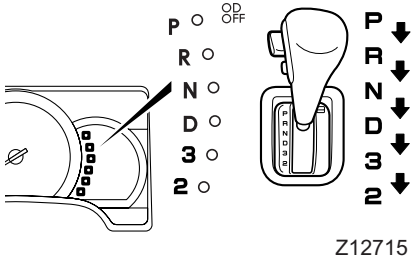
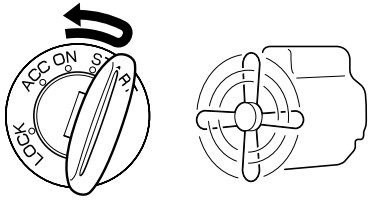
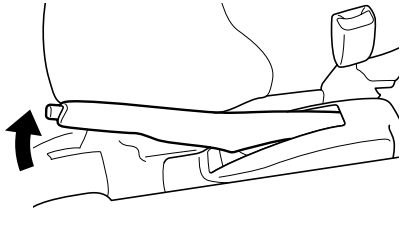
| | | |
|---|---|---|
| ① |  Z11188 | **Coolant level**<br>Check that the coolant level is between the “FULL” and “LOW” marks on the reservoir tank.<br>⇨ P. 12-50 |
| ② |  Z10749 | **V-belt tension and damage**<br>Check the belt for proper deflection when a force of 98 N (22 lbs., 10 kgf) is applied to the point midway between the pulleys.<br>Check also that the belt is not nicked or otherwise damaged.<br>⇨ P. 12-55 |
| ③ |   Z17815 | **Engine oil level**<br>Check that there is sufficient engine oil using the oil level gauge or oil level check button.<br>Change the engine oil if its level is above the round hole on the oil level gauge.<br>⇨ P. 12-23 |
| ④ |  Z10751 | **Leakage of coolant, fuel and oil**<br>Check the underneath of the vehicle for any sign of leakage. |

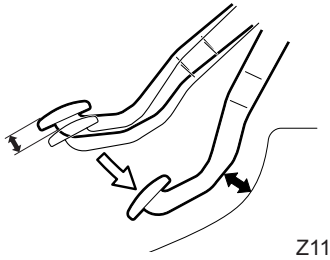
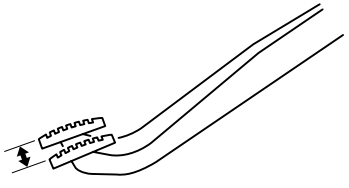
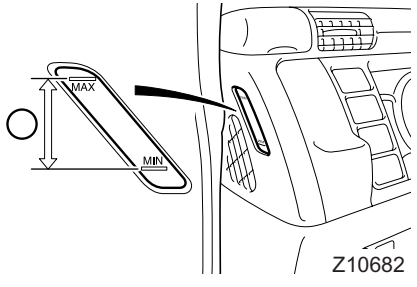
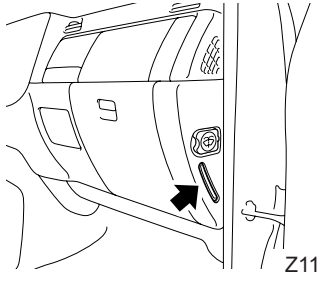


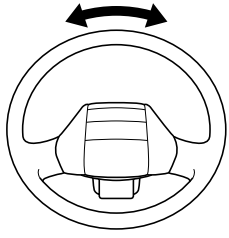
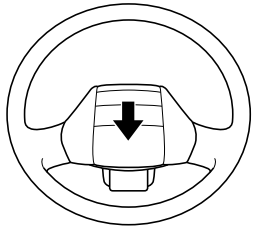
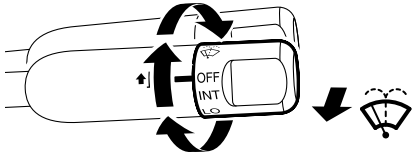
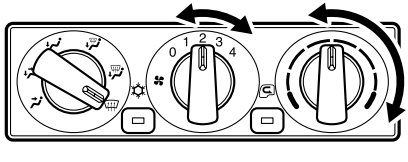
Z12716

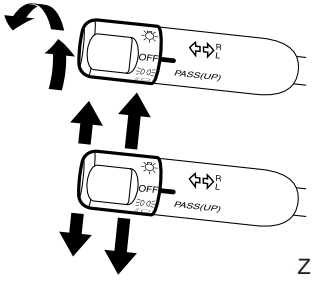
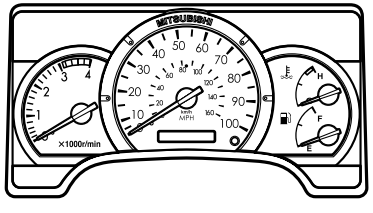
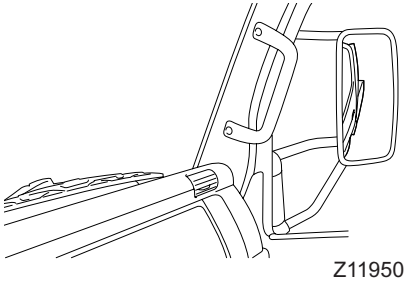
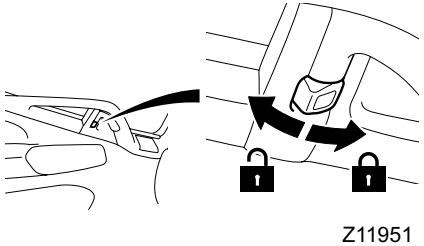
## 2 In the driver's seat

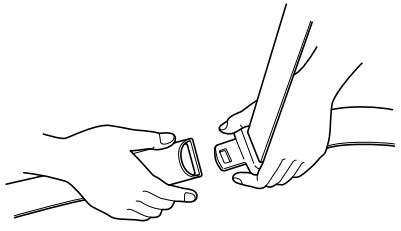
First, check the range selector lever ⑤ with the engine stationary. Then, start the engine and perform the following checks ⑥ and after while allowing the engine to warm up.

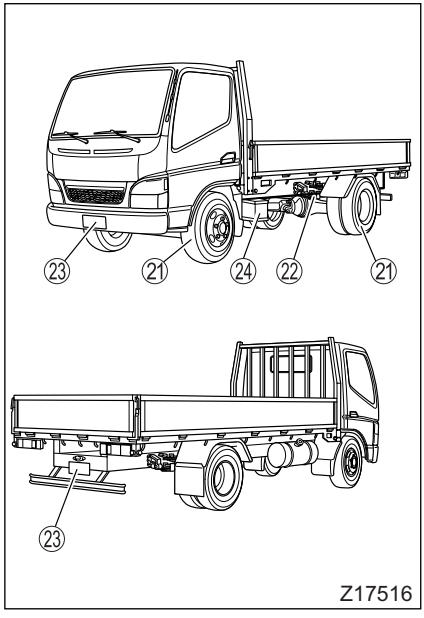
| | | |
|---|---|---|
| ⑤ |  Z12715 | **Range selector lever**<br><Automatic transmission vehicle><br>Set the starter switch in ON position but not start the engine.<br>• Check if the range selector lever operates smoothly and clicks at each range position ("P" position through "2" position).<br>• Check if the shift indicator lamp in the meter cluster indicates the selected range.<br>• Set the range selector lever to "P" position. Turn the starter key to LOCK position and check if the key can be removed from the key cylinder.<br>⇨ P. 12-57 |
| ⑥ |  Z09197 | **Engine conditions**<br>Check the engine for smooth starting and quiet running. |
| ⑦ |  Z10681 | **Parking brake lever stroke**<br>Check that the parking brake lever stroke is 7 to 9 notches.<br>⇨ P. 12-61 |

| | | |
|---|---|---|
| ⑧ |  Z11955 | **Service brake pedal**<br>Make sure that the brake pedal has 0.1 to 3 mm (0.0039 to 0.12 in.) free play when pressed by finger.<br>Check also that when the brake pedal is fully depressed, there is a gap of 20 mm (0.79 in.) or more between the pedal and the floor.<br>⇨ P. 12-59 |
| ⑨ |  Z11945 | **Clutch pedal free play**<br><Manual transmission vehicles><br>With your hand, depress the clutch pedal and make sure that it has 0.2 to 4 mm (0.0079 to 0.16 in.) of free play.<br>⇨ P. 12-62 |
| ⑩ |  Z10682 | **Brake fluid level**<br>Check that the brake fluid level is between the “MAX” and “MIN” marks on the reservoir tank.<br>⇨ P. 12-36 |
| ⑪ |  Z11946 | **Windshield washer fluid level**<br>Confirm that the windshield washer fluid level is above the bottom of the inspection window.<br>⇨ P. 12-77 |

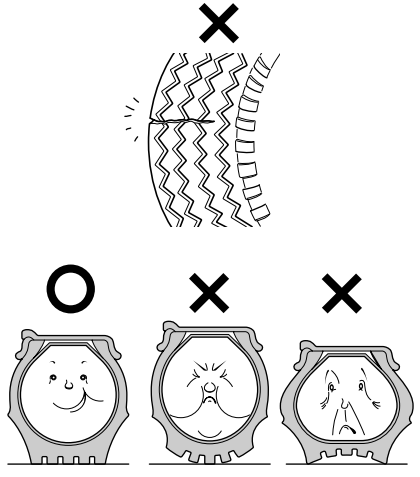
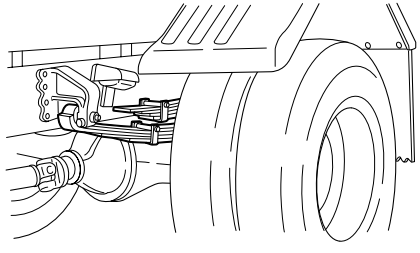
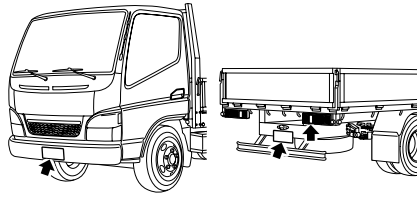
| | | |
|---|---|---|
| ⑫ |  Z11947 | **Steering wheel free play**<br>Gently turning the steering wheel, check that its play is more than 5 mm (0.2 in.) and less than 50 mm (1.97 in.).<br>⇨ P. 12-58 |
| ⑬ |  Z11948 | **Horn operation**<br>Press the horn button to check that the horn is working properly. |
| ⑭ |   Z11614 | **Windshield wiper and washer operation**<br>Check the washer for proper fluid spray direction and the wipers for normal action.<br>⇨ P. 5-22 |
| ⑮ |   Z11696 | **Defroster**<br>Make sure that warm air blows properly onto the windshield.<br>⇨ P. 9-3, 9-7 |

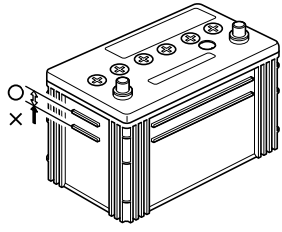
| | | |
|---|---|---|
| ⑯ |  <br>Z12505 | **Lighting system**<br>Make sure that each lamp lights up or flashes properly. Check lamp lenses for dirt and damage.<br>⇨ P. 5-19 |
| ⑰ |  <br>Z11949 | **Gauge, warning/indicator lamp operation**<br>Check that gauges, warning lamps and indicators are working properly.<br>⇨ P. 6-2 |
| ⑱ |  <br>Z11950 | **Rearview mirrors**<br>Seated in the driver's seat, adjust the angles for clear views of the sides and rear.<br>Make sure the mirrors are clean. |
| ⑲ |  <br>Z11951 | **Door locks**<br>Push the lock knob and verify that the door does not open even when the inner handle is operated. |

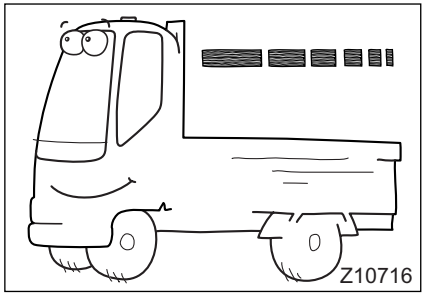
| | | |
|---|---|---|
| ⑳ |  Z11943 | **Seat belts**<br>Confirm that the seat belt buckles function correctly when fastening and unfastening. |




## 3 While walking around the vehicle

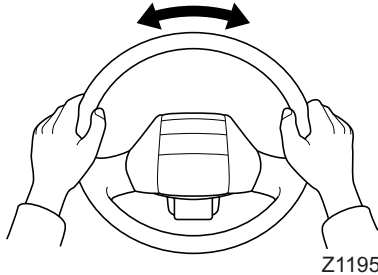
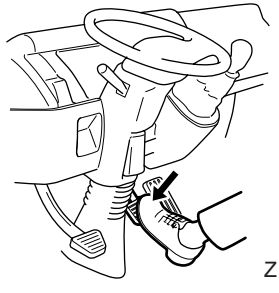
| | | |
|---|---|---|
| ㉑ |  Z10752 | **Wheels and tires**<br>Check the disc wheels for cracks and other damage. Check the tires for inflation pressure, tread groove depth, foreign objects in grooves, cracks, and uneven wear.<br>⇨ P. 12-63 |
| ㉒ |  Z10753 | **Suspension springs**<br>Check for broken springs and tilt of vehicle body toward either side. |
| ㉓ |  Z15026 | **License plate and reflector condition**<br>Check the license plate and reflectors for loose installation, damage, and dirt. |

| | | |
|---|---|---|
| ㉔ |  Z17518 | **Battery fluid level**<br>Check that the battery fluid level is between the “UPPER” and “LOWER” level lines marked on the sides of the battery case.<br>⇨ P. 12-78 |


Z10716

## 4 While driving at slow speeds

Perform the following checks while driving in a safe place at speeds lower than 20 km/h (12 mph).

| | | |
|---|---|---|
| ㉕ |  Z11954 | **Steering wheel operation**<br>Check that the steering wheel does not vibrate or pull to one side and that it is not unduely heavy. Also make sure that the steering wheel returns to its neutral position smoothly.<br>⇨ P. 12-58 |
| ㉖ |  Z10756 | **Brake performance**<br>Depress the brake pedal and check that the brakes work effectively and evenly on all wheels.<br>⇨ P. 12-60 |

## Lubrication

Application and replacement of lubricants at the specified intervals is vital to the vehicle's performance, longevity, and safety. Following the maintenance schedule will give optimum results.

⇨ P. 15-1

- If the vehicle is often used in demanding conditions, for example, on unpaved roads, near the coast, or in cold regions, lubricants should be applied and replaced more quickly than specified in the maintenance schedule.
  Consult an authorized dealer for the maintenance schedule appropriate to your vehicle operating conditions.
- Use only the lubricants specified. ⇨ P. 14-3
- Special lubricants must be used if the vehicle is used at temperatures below –23°C (–10°F). For details, refer to an authorized dealer.

### ⚠ CAUTION

- **Apply and replace lubricants regularly. Use of lubricants beyond their designed service life could cause bearings or other components to seize up and cause an accident.**
- **Any checking, application, or replacement of lubricants should be carried out with the vehicle parked on level ground.**
- **Wipe all lubricant inspection windows and filling ports carefully to prevent the entry of mud, trash, water, or other contaminants.**
- **Never flush waste oil into the sewers or onto the ground. Take it to a gas station or authorized dealer.**

## Greasing

### 1 Grease nipples

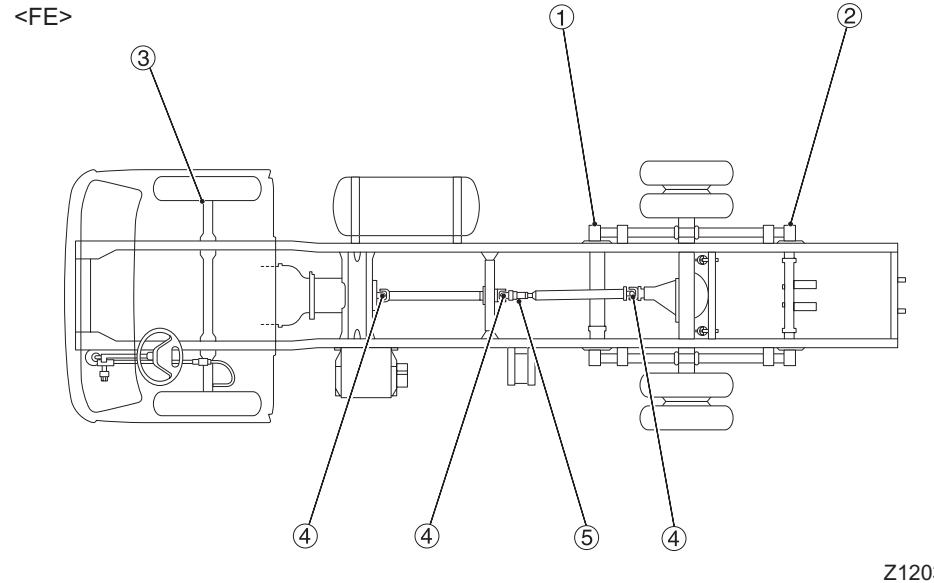
Remove all dust and dirt from the grease nipples before using them. Always use the recommended grease.

### ⚠ CAUTION

**Wipe away any grease that sticks to wires or rubber hoses and any grease that overflows from the grease nipples.**

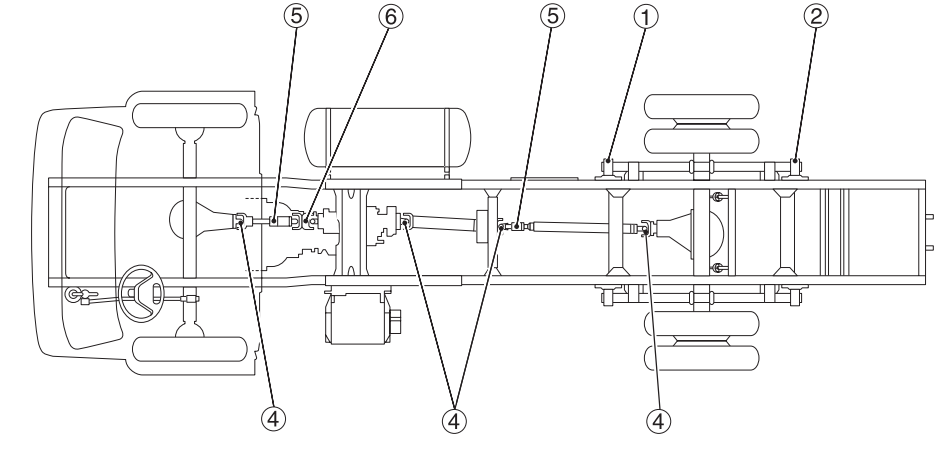
| | |
|---|---|
| Greasing intervals | Every 10,000 km (6,000 miles) |

<FE>



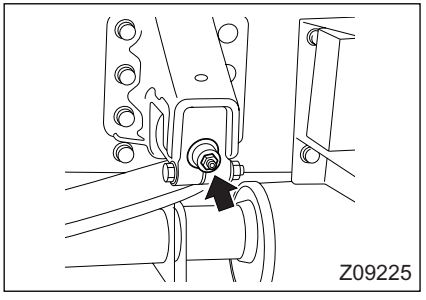

Z12034

<FG>

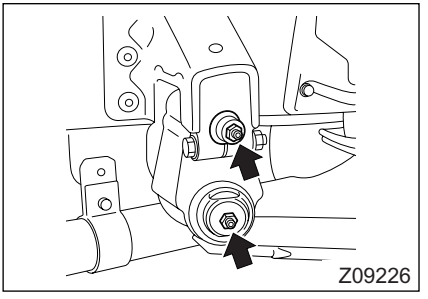



Z12506

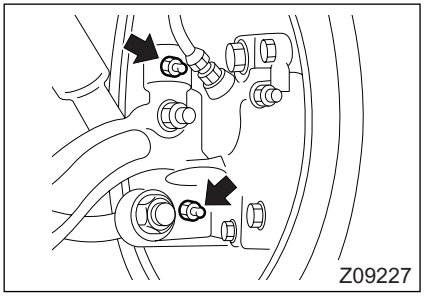
①



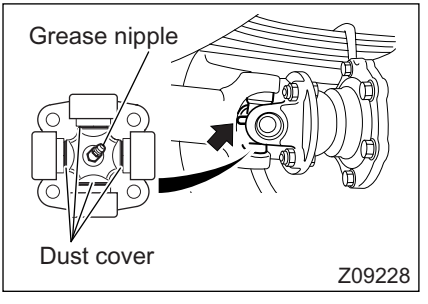

②



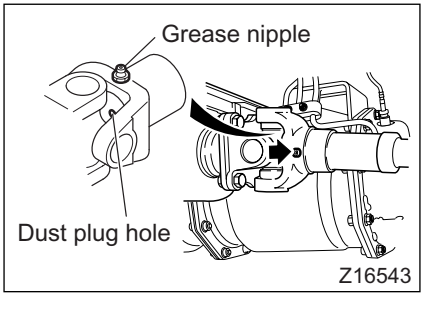

③



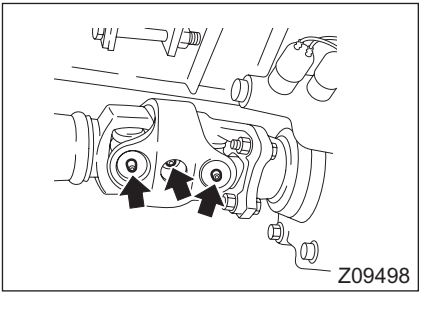

④




⑤




⑥



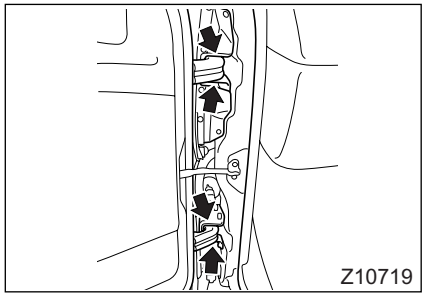

**Recommended lubricant:**
**Chassis grease**
**NLGI No. 1 (Li soap)**

① Rear spring pin, front (2 points each on both sides)
② Rear spring pin, rear (4 points each on both sides)
③ King pin bearing (4 points in total on both sides)

**Recommended lubricant:**
**Wheel bearing grease**
**NLGI No. 2 (Li soap)**

④ Propeller shaft universal joint
Pump in grease until it comes out of the dust covers (at 4 places) of the universal joint.
⑤ Propeller shaft slip joint
Pump in grease until it comes out of the dust plug hole of the slip joint.
⑥ Propeller shaft double cardan joint <FG>

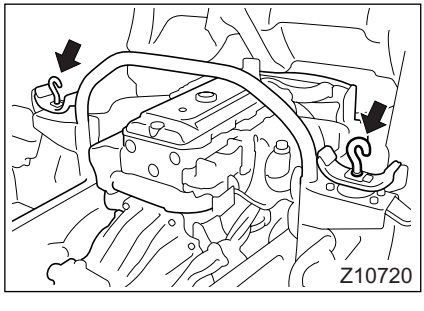
*NOTE:*
*The number of greasing points on the propeller shaft differs from model to model.*


Z10719

## 2 Door hinge (4 points in total on both sides; 8 points in Crew-cab models)

| | |
|---|---|
| Greasing intervals | Every 10,000 km (6,000 miles) |

**Recommended lubricant:**
**Chassis grease**
**NLGI No. 1 (Li soap)**

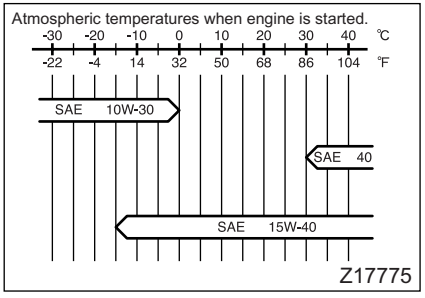

Z10720

## 3 Anchor hooks (two places)

<Not applicable to Crew-cab models>

| | |
|---|---|
| Greasing intervals | Every 10,000 km (6,000 miles) |

**Recommended lubricant:**
**Chassis grease**
**NLGI No. 1 (Li soap)**


Atmospheric temperatures when engine is started.
-30 -20 -10 0 10 20 30 40 ℃
-22 -4 14 32 50 68 86 104 ℉
SAE 10W-30
SAE 40
SAE 15W-40
Z17775

## Oils and fluids

### 1 Engine oil

Performance, life, and startability of the engine depend to a large degree on the engine oil. Always use oil of the specified grade and viscosity.
The proper engine oil viscosity numbers for various atmospheric temperature ranges are shown in the diagram.

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check |
| Replacement intervals | Every 10,000 km (6,000 miles) |

The first engine oil replacement during the run-in period should be performed at the first 4,000 km (2,500 miles).

**⚠ CAUTION**

**Replace the engine oil earlier if the engine is frequently used at high speeds or under high loading.**

**Recommended lubricant:**
**Engine oil**
**API classification CJ-4**
**SAE40, 10W-30, 15W-40**

**⚠ CAUTION**

- **Use only the specified engine oil. Any other oils may contain substances that cause the ceramic filter inside the DPF to be loaded with particulate matter (PM) prematurely to the capacity and thus shorten the effectively functioning period of the DPF.**
- **Change the engine oil at the specified intervals. During the regeneration process of the DPF, part of the fuel may mix into the engine oil while the PM is being removed by oxidation. Unless changed at the specified intervals, engine oil may be excessively deteriorated by mixing of fuel which could cause engine failure.**

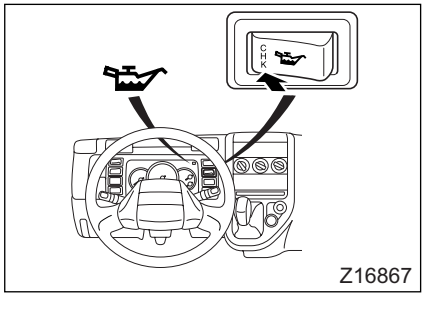
**Quantity required:**

| | | |
|---|---|---|
| Oil pan | FE | Approx. 7 liters (7.4 qts) |
| | FG | Approx. 8 liters (8.5 qts) |
| Oil filter | | Approx. 1 liter (1.1 qts) |

The engine oil level can be checked by using either the oil level gauge or the oil level check button on the instrument panel. The oil level check button is for simple checking. Therefore, use of the oil level gauge is recommended for precise checking.

*NOTE:*

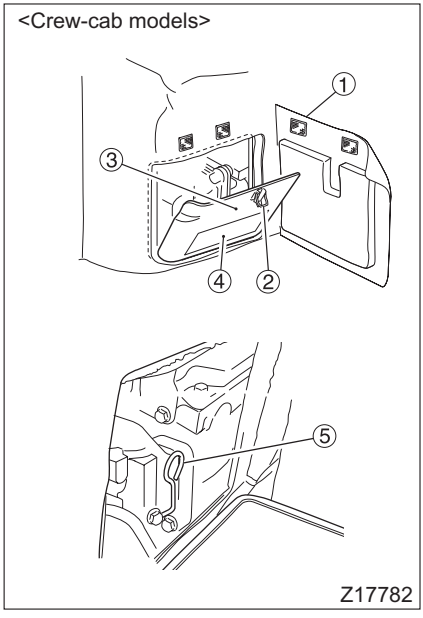
- *Check the engine oil level with the vehicle parked on a level place and the engine stopped. A correct engine oil level cannot be determined when the vehicle is tilted, or if the engine is running or the time after stopping the engine is too short. Let the engine stand at least 30 minutes after stopping it before checking the oil level.*
- *The quantity of engine oil may increase due to the fuel that may have mixed with it when the DPF trapped PM is removed by oxidation. This does not indicate any abnormality. For the same reason, the engine oil can smell like fuel; this also does not indicate any abnormality.*




**1.1 Checking by use of oil level check button (simplified method)**

1. Press the button before starting the engine. Estimate the oil level from the color of the lamp that comes on.
   Green: Oil level is correct.
   Amber: Oil level is too low.
2. If the amber lamp comes on, replenish with the recommended engine oil.

*NOTE:*
*Provided the engine is not running, it is possible to check the oil level using the oil level check button regardless of the position of the starter switch.*




### 1.2 Checking by use of oil level gauge

- **Preparation**

<Vehicles other than Crew-cab models>

1. Tilt the cab.

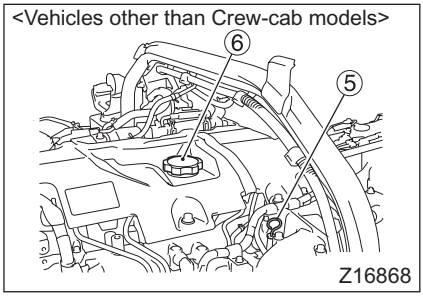
<Crew-cab models>

1. Open the inspection cover ① in the rear floor mat.
2. Release the lock ②, then open the hatch ③.
3. After inspection, close the hatch and inspection cover by following the opening sequence in reverse.

Observe the following caution, which is also printed on the caution plate ④.

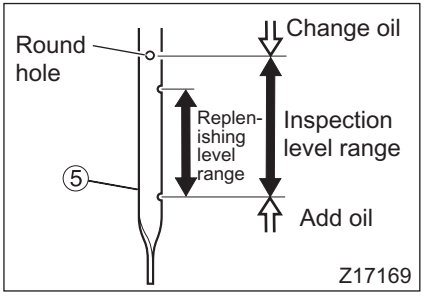
**⚠ CAUTION**

**INSPECT CAREFULLY AS THIS COVER AND INSIDE MAY BE EXTREMELY HOT.**




- **Checking**

1. Remove oil level gauge ⑤ and wipe off oil with a cloth.
2. Fully insert the oil level gauge in the crankcase, and gently draw it out.




3. The oil level marked on the oil level gauge should be within the “inspection level range” indicated in the figure (between the lower notch and round hole).
4. If necessary, add engine oil to a level within the “replenishing level range” indicated in the figure. Change the oil if its level is above the round hole on the oil level gauge. The engine oil must also be changed if it is extremely dirty.

## ⚠ CAUTION

**If the oil level is above the round hole on the oil level gauge, change the engine oil immediately. Because this is a sign of deteriorated engine oil performance, continued use of the same oil will cause engine failure and could even cause uncontrolled revving of the engine.**

5. After the check, insert the oil level gauge into position and secure it properly.

**1.3 Adding oil**

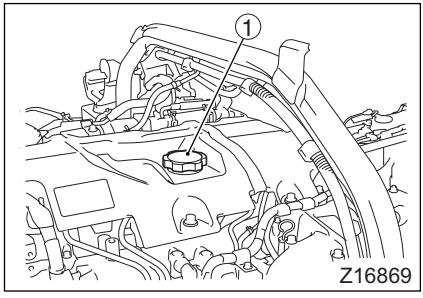
1. On Crew-cab models, the engine access opening is located under the assistant driver's seat. Clean the area around oil filler cap ⑥ to prevent dust and dirt from entering the engine.
2. Remove the oil filler cap and add oil as necessary.
3. Make sure that the oil level is correct. If the oil level is checked immediately after adding, the reading may be lower than the actual level because all added oil may have not yet reached the oil pan. Wait for at least 5 minutes after adding oil. If you add too much oil, remove oil through the drain plug on the oil pan to achieve the correct level.
4. Install the oil filler cap.

## ⚠ WARNING

**Take care not to spill engine oil as engine oil on the exhaust manifold or other hot sections of engine could catch fire. Wipe clean the oil if spilt.**

## ⚠ CAUTION

- **The added oil should be of the same grade and viscosity as the oil originally placed in the engine.**
- **Take care not to add more than the specified quantity of oil. The engine can be severely damaged if the correct engine oil level is not maintained.**



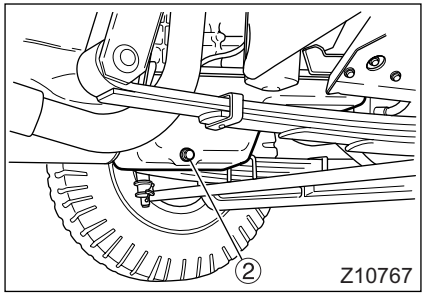

**1.4 Replacement**

1. Clean the surfaces around the oil filler cap ① and remove the oil filler cap.
2. Remove drain plug ② from the oil pan to remove the oil. Replace the oil filter at the same time.

⇨ P. 12-39

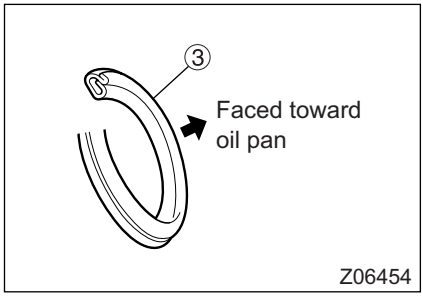
**⚠ WARNING**

**The engine oil is extremely hot immediately after the vehicle has been operated. Take care to avoid being scalded when draining hot oil. Give the oil time to cool before draining it.**




*NOTE:*
*Oil removal is quicker if performed not so long after the vehicle has been stopped and while the oil is still warm.*

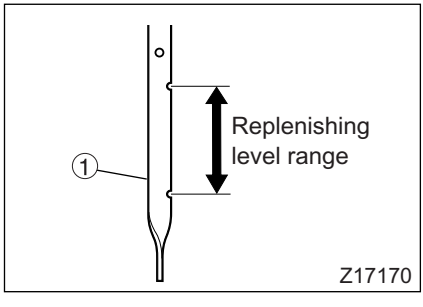
3. After oil has been drained out, clean the area around the drain plug hole.




4. Install the drain plug with a new gasket ③. The side indicated on the figure of the gasket must be faced toward the oil pan.

| | |
|---|---|
| Tightening torque | 39 N·m (29 ft.lbs., 4.0 kgf·m) |

5. Carefully pour fresh engine oil through the oil filler.




6. Wait for more than 5 minutes and check the oil level using the oil level gauge ①.
7. Crank the engine with the starter switch, then start the engine. ⇨ P. 5-9
8. Let the engine idle allowing oil to circulate throughout the engine parts. Then, stop the engine and wait for more than 30 minutes before checking the oil level again. Also check for possible oil leaks.
9. After adding oil to the correct level, ensure that the drain plug, oil filler cap and oil level gauge are securely installed.

**⚠ CAUTION**

- **Take care not to add more than the specified quantity of oil. The engine can be severely damaged if the correct engine oil level is not maintained.**
- **If the engine is frequently run at high speeds or under heavy loads, the engine oil will deteriorate quickly and must be replaced sooner than specified.**

**⚠ WARNING**

**Take care not to spill engine oil as engine oil on the exhaust manifold or other hot sections of engine could catch fire. Wipe clean the oil if spilt.**

### 2 Manual transmission gear oil

| | |
|---|---|
| Inspection intervals | Every 10,000 km (6,000 miles) |
| Replacement intervals | Every 30,000 km (18,000 miles) |

The first transmission gear oil replacement during the run-in period should be performed at the initial 4,000 km (2,500 miles) point.

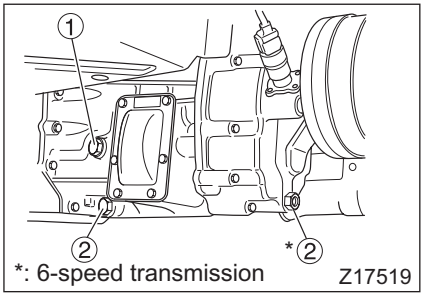
**Recommended oil:**
**Gear oil**
**API classification GL-3**
**SAE80 (general)**
**GL-3 SAE90 (warm region)**
**GL-4 SAE90 (tropical region)**
**Engine oil**
**API Classification CC**
**SAE30 or 40**
**(long period of high-speed driving)**

**Quantity required:**

| Model | Quantity |
|---|---|
| 5-speed transmission | Approx. 3.6 liters (3.8 qts) |
| 6-speed transmission | Approx. 4.4 liters (4.6 qts) |

**⚠ WARNING**

**Do not check or replace the gear oil immediately after operating the vehicle since the engine, transmission, exhaust pipe, and other components will be extremely hot.**




*: 6-speed transmission Z17519

**2.1 Check**

1. Remove inspection plug ① and make sure that oil is topped off.
2. If insufficient, add oil through the inspection plug hole until it is full to the brim.

**⚠ CAUTION**

**The added oil should be of the same grade and viscosity as the oil originally placed in the transmission.**

3. Install the inspection plug.

| | |
|---|---|
| Tightening torque | 68.6 ± 14.7 N·m (51 ± 11 ft.lbs., 7.0 ± 1.5 kgf·m) |

**2.2 Replacement**

1. Remove inspection plug ① and drain plug ② to let the oil flow out.

**⚠ WARNING**

**The gear oil is extremely hot immediately after the vehicle has been operated. Take care to avoid being scalded when draining hot oil. Give the oil time to cool before draining it.**

*NOTE:*
*Oil removal is quicker if performed not so long after the vehicle has been stopped and while the oil is still warm.*

2. The drain plug is fitted with a magnet. Wipe off any metal particles sticking to the magnet and install the drain plug.

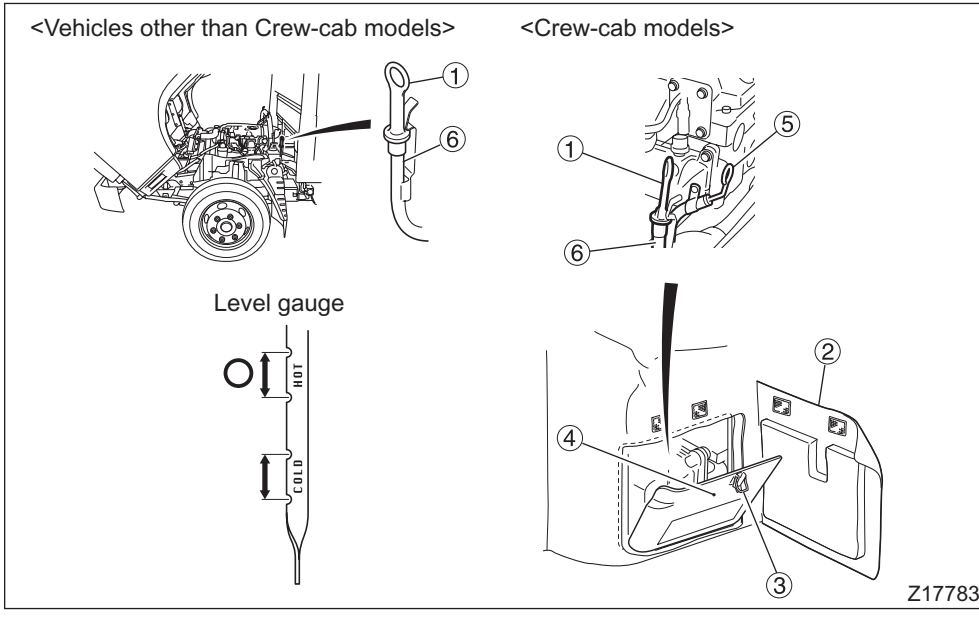
| | |
|---|---|
| Tightening torque | 68.6 ± 14.7 N·m (51 ± 11 ft.lbs., 7.0 ± 1.5 kgf·m) |

3. Add oil through the inspection plug hole until it reaches the bottom of the hole.

4. Install the inspection plug.

| | |
|---|---|
| Tightening torque | 68.6 ± 14.7 N·m (51 ± 11 ft.lbs., 7.0 ± 1.5 kgf·m) |

### 3 Automatic transmission fluid




| | |
|---|---|
| Inspection intervals | Every 10,000 km (6,000 miles) |
| Replacement intervals | Every 40,000 km (24,000 miles) |

**Recommended fluid:**
**Automatic transmission fluid**
**(Exxon Mobil: Mobil ATF3309 or equivalent)**

Have the automatic transmission oil changed by an authorized dealer.

### 3.1 Checking

*NOTE:*
*Inspection of the fluid level should be carried out when the fluid is at a high temperature after driving and with the level gauge ① indicating "HOT". The "COLD" level is for reference purposes when the oil temperature is low, and accurate measurement will not be possible if the fluid temperature is low.*

1. Park the vehicle on level ground. Prevent the vehicle from moving by pulling the parking brake lever and blocking the wheels with chocks.
2. Start the engine. With the engine idling and brake pedal depressed, select each gear range in turn, then put the range selector lever in the "P" position.
3. Remove the level gauge ① that is located behind the cab. If it is difficult to remove, tilt the cab. On the Crew-cab models, open the inspection cover ② in the rear floor mat. Release the lock ③, then open the hatch ④.

## ⚠ CAUTION

**The inspection hatch may remain at high temperatures for a certain period of time after the engine has been stopped. Be careful not to be burnt by the hatch or engine parts during inspection.**

*NOTE:*
*In a Crew-cab model, the automatic transmission fluid level gauge ① and engine oil level gauge ⑤ are close to each other. Be careful not to confuse them.*

4. Wipe the level gauge clean, reinsert it, then slowly remove it again. Check the level of fluid on the level gauge.
5. The fluid level should be in the "HOT" range.
6. If the fluid level is too low, add fluid via the level gauge guide ⑥.

*NOTE:*
- *Always carry out fluid level checks with the engine idling.*
- *The fluid level rises as the fluid heats up.*

## ⚠ CAUTION

- **Take care not to add more than the specified quantity of fluid. The automatic transmission**

**can be severely damaged if the correct fluid level is not maintained.**
- **To prevent foreign matters entering and damaging the automatic transmission, add fluid from a clean container.**

## 4 Transfer gear oil <FG>

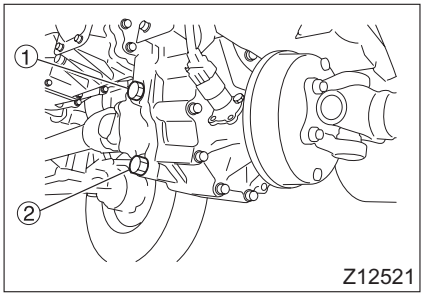
| | |
|---|---|
| Inspection intervals | Every 10,000 km (6,000 miles) |
| Replacement intervals | Every 30,000 km (18,000 miles) |

The first transmission gear oil replacement during the run-in period should be performed at the initial 4,000 km (2,500 miles) point.

**Recommended oil:**
**Gear oil**
**API classification GL-3 SAE 80 (general)**
**API classification GL-3 SAE 90 (warm regions)**
**API classification GL-4 SAE 90 (tropical regions)**

**Quantity required:**

| | |
|---|---|
| Quantity | Approx. 3.1 liters (3.3 qts) |




### 4.1 Check

1. Remove inspection plug ① and make sure that oil is topped off.
2. If insufficient, add oil through the inspection plug hole until it is full to the brim.

## ⚠ CAUTION

**The added oil should be of the same grade and viscosity as the oil originally placed in the transfer.**

3. Install the inspection plug.

| | |
|---|---|
| Tightening torque | 68.6 ± 14.7 N·m (51 ± 11 ft.lbs., 7.0 ± 1.5 kgf·m) |

**4.2 Replacement**

1. Remove inspection plug ① and drain plug ② to let the oil flow out.

**⚠ WARNING**

**The gear oil is extremely hot immediately after the vehicle has been operated. Take care to avoid being scalded when draining hot oil.**

*NOTE:*
*Oil removal is quicker if performed soon after the vehicle has been stopped and while the oil is still hot.*

2. The drain plug is fitted with a magnet. Wipe off any metal particles sticking to the magnet and install the drain plug.

| | |
|---|---|
| Tightening torque | 68.6 ± 14.7 N·m (51 ± 11 ft.lbs., 7.0 ± 1.5 kgf·m) |

3. Add oil through the inspection plug hole until it reaches the bottom of the hole.
4. Install the inspection plug.

| | |
|---|---|
| Tightening torque | 68.6 ± 14.7 N·m (51 ± 11 ft.lbs., 7.0 ± 1.5 kgf·m) |

## 5 Axle housing gear oil

| | |
|---|---|
| Inspection intervals | Every 10,000 km (6,000 miles) |
| Replacement intervals | Every 30,000 km (18,000 miles) |

The first differential gear oil replacement during the run-in period should be performed at the initial 4,000 km (2,500 miles) point.

**Recommended oil:**
**Gear oil**
**API classification GL-5**
**Below 40°C (104°F) SAE90**
**40°C (104°F) or higher SAE140 or 85W-140**

## ⚠ CAUTION

- **Use oil conforming to GL-5, SAE140 or SAE85W-140 if the vehicle is to be driven under heavy load conditions as for example driving up long uphill grades. Remember, however, that this oil is to be used only when the temperature is higher than 10°C (50°F).**
- **On vehicles with a limited slip differential, fill the differential with Genuine Gear Oil, Part No. 8149630EX (GL-5, SAE90).**

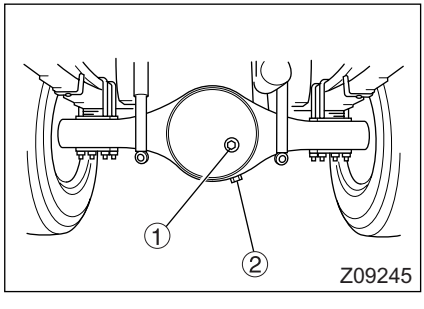
**Quantity required:**

| Model | | Quantity |
|---|---|---|
| FE | | Approx. 4.5 liters (4.8 qts) |
| FG | Front axle | Approx. 3.0 liters (3.2 qts) |
| | Rear axle | Approx. 4.5 liters (4.8 qts) |

These oil quantities are given only as guidelines. Be sure to check the correct oil level by removing the inspection plug as indicated below.

## ⚠ WARNING

**Do not check or replace the gear oil immediately after operating the vehicle since the axle and gear oil will be extremely hot.**




**5.1 Check**

1. Remove inspection plug ① and make sure that the oil is topped off.
2. If insufficient, add oil through the inspection plug hole until it is full to the brim.

## ⚠ CAUTION

**The added oil should be of the same grade and viscosity as the oil originally placed in the differential gears.**

3. Install the inspection plug.

| | |
|---|---|
| Tightening torque | 98 to 115 N·m (72 to 87 ft.lbs., 10 to 12 kgf·m) |

**5.2 Replacement**

1. Remove inspection plug ① and drain plug ② to let the oil flow out.

**⚠ WARNING**

**The gear oil is extremely hot immediately after the vehicle has been operated. Take care to avoid being scalded when draining hot oil. Give the oil time to cool before draining it.**

*NOTE:*
*Oil removal is quicker if performed not so long after the vehicle has been stopped and while the oil is still warm.*

2. The drain plug is fitted with a magnet. Wipe off any metal particles sticking to the magnet and install the drain plug.

| | |
|---|---|
| Tightening torque | 98 to 115 N·m (72 to 87 ft.lbs., 10 to 12 kgf·m) |

3. Add oil through the inspection plug hole until it reaches the bottom of the hole.
4. Install the inspection plug.

| | |
|---|---|
| Tightening torque | 98 to 115 N·m (72 to 87 ft.lbs., 10 to 12 kgf·m) |

## 6 Brake fluid

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check |
| Replacement intervals | Every 50,000 km (30,000 miles) or every 24 month |

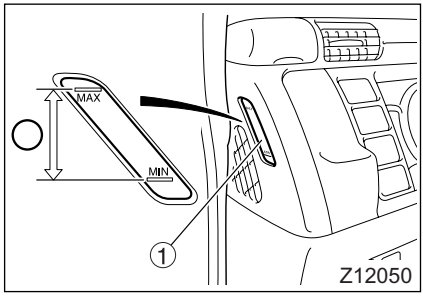
Have the brake fluid replacement performed by an authorized dealer.

**Recommended fluid:**
**Brake fluid SAE J1703**
**FMVSS No. 116, DOT3**

*NOTE:*
*With a manual transmission vehicle, the brake fluid serves also as clutch fluid.*

**⚠ WARNING**

- **Be sure to use the recommended brake fluid.**
- **Use only one brand of recommended brake fluid. Mixing of different brands or types of fluid will change the properties of the fluid possibly resulting in a lower fluid boiling point and damaged brake components.**
  **If you wish to change the brand of brake fluid, replace all the existing fluid in the brake system with the new brand fluid.**
- **Never allow engine oil, diesel fuel, gear oil, automatic transmission fluid, or any other mineral oil to mix with the brake fluid. When mixed with the brake fluid even very small in amounts, such oils will cause the rubber parts of the brake system to swell, and could cause brakes to become sluggish or to drag. Also, do not use containers which have been used for mineral oil for brake fluid.**
- **Because brake fluid is highly hygroscopic, it should be kept in a dry place both during refilling and storage. If brake fluid absorbs moisture, the boiling point is lowered, a condition which could result in vapor lock. This is very dangerous.**
  **Do not open the reservoir tank cap when checking the brake fluid.**
- **Brake fluid dissolves paint. If you spill the fluid, wipe it clean or flush it off with water. If not cleaned off, brake fluid can cause discoloration, corrosion, or cracks in the paintwork.**
- **If the brake fluid is used over long periods, its boiling point drops significantly due to the moisture it has absorbed, thereby increasing the likelihood of dangerous vapor lock. Therefore, be sure to replace the brake fluid every 50,000 km (30,000 mile) or 24 months, whichever is sooner.**
- **When adding brake fluid, be careful not to allow dirt and other foreign matter to enter the reservoir tank. Any foreign matter entering the reservoir tank could cause the braking system to malfunction.**
- **If the brake fluid level drops abnormally, brake fluid may be leaking from a pipe or other component. Have the braking system inspected by an authorized dealer.**



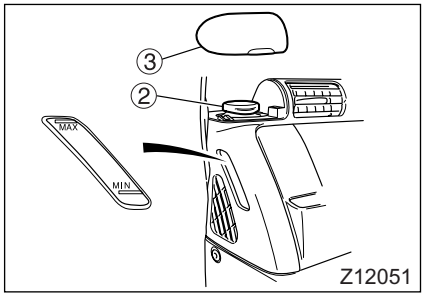

**6.1 Check**

The fluid level should be between the "MAX" and "MIN" lines on reservoir tank ①. Check whether the reservoir tank contains foreign matter. If you see foreign matter in the reservoir tank, have the reservoir tank inspected and cleaned by an authorized dealer.

*NOTE:*
*The* BRAKE *warning lamp is illuminated when the brake fluid level drops below the "MIN" line.*

## ⚠ CAUTION

**Do not open cap ② of reservoir tank for inspection purposes.**




**6.2 Adding fluid**

1. If the fluid level is lower than the "MIN" line, remove cover ③, clean the surfaces around cap of reservoir tank, open cap ②, and add the recommended brake fluid up to the "MAX" line.
2. Close the cap firmly.

## ⚠ WARNING

- **The container used for adding brake fluid should be a clean one free of moisture, mineral oil, and dust.**
- **Be extremely careful not to let dust and other foreign matter enter the reservoir tank, as foreign matter in the tank could cause a failure of the brake system.**
  **If you see foreign matter in the reservoir tank, have it checked and cleaned by an authorized dealer.**
- **Be careful not to exceed the "MAX" line when adding brake fluid.**
- **If the fluid level is unusually low, there is a fluid leak in the brake line. In this case, have your vehicle inspected at an authorized dealer.**

## 7 Power steering fluid

| | |
|---|---|
| Inspection intervals | Every 10,000 km<br>(6,000 miles) |
| Replacement intervals | Every 50,000 km<br>(30,000 miles)<br>or every 12 months |

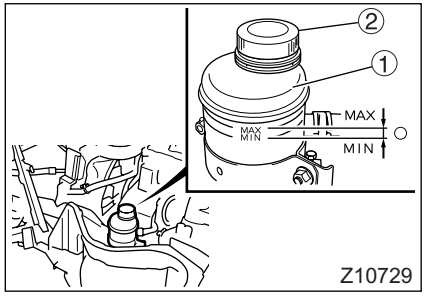
Have an authorized dealer replace the fluid.

**Recommended fluid:**
**Automatic transmission fluid DEXRON, DEXRON II or DEXRON III type**

## ⚠ CAUTION

**When adding power steering fluid, be sure to use fluid of the same brand as the existing fluid. Mixing two or more different fluids will change their properties and could cause a failure.**

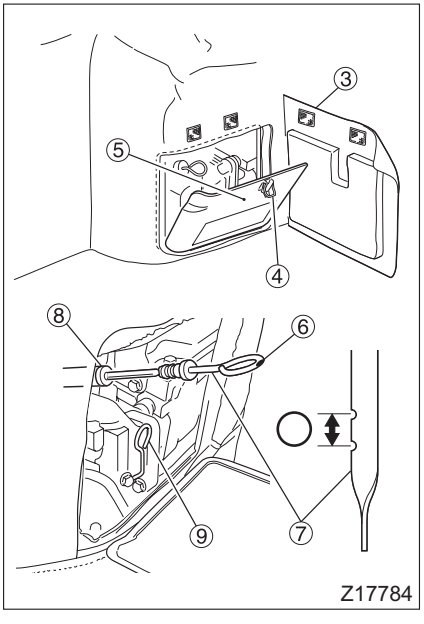
*NOTE:*
*Inspect the power steering fluid level after stopping the engine and allowing the power steering fluid to cool. Increases in the fluid temperature cause increases in the fluid level, so an accurate inspection of the level is not possible unless the fluid is cold.*




### 7.1 Inspecting and adding fluid

- **Vehicles other than Crew-cab model**

1. Make sure the parking brake is securely applied.
2. Manual transmission vehicles:
   Place gearshift lever in the neutral position.
   Automatic transmission vehicles:
   Place the range selector lever in the “P” position.
3. With the vehicle parked on level ground, place the front wheels in the straight-ahead position and stop the engine.
4. Apply chocks to the wheels and make sure the vehicle does not move.
5. Tilt the cab. ⇨ P. 12-5
6. Observe the power steering fluid level in the reservoir tank ①.
7. If the fluid level is between the “MAX” and “MIN” lines, it is acceptable. Also, check whether the power steering fluid is dirty. If it is dirty, have it replaced by an authorized dealer.
8. If the fluid level is below the “MIN” line, clean the reservoir tank’s cap ② and the surrounding area then open the cap and add power steering fluid until it reaches the “MAX” line.
9. Securely fit the cap.




- **Crew-cab model**

1. Make sure the parking brake is securely applied.
2. Manual transmission vehicles:
   Place gearshift lever in the neutral position.
   Automatic transmission vehicles:
   Place the range selector lever in the “P” position.
3. With the vehicle parked on level ground, place the front wheels in the straight-ahead position and stop the engine.
4. Apply chocks to the wheels and make sure the vehicle does not move.
5. Open the inspection cover ③ in the rear floormat. Release the lock ④, then open the hatch ⑤.

## ⚠ CAUTION

**In certain cases, the inspection hatch may remain at high temperatures for a certain period of time after the engine has been stopped. In order to prevent burns, avoid touching this hatch or other parts of the engine until the temperature has dropped sufficiently.**

*NOTE:*
*The engine oil level gauge ⑨ and power steering fluid level gauge ⑦ are located close to each other. Do not mistake one for the other.*

6. Clean the end of the guide pipe ⑧ for the level gauge ⑦ with green painted mark ⑥, then withdraw the level gauge and wipe off all the fluid that is stuck to it. Next, insert the level gauge and gently withdraw it. If the fluid level on the level gauge is between the notches, it is acceptable. Also, check whether the power steering fluid is dirty. If it is dirty, have it replaced by an authorized dealer.

## ⚠ CAUTION

**The power steering fluid level gauge has a green paint mark ⑥. Do not mistake it for the engine oil level gauge.**

7. If the fluid level on the level gauge is not between the notches, add fluid through the guide pipe. Add a little fluid at a time, checking the new level with the level gauge each time.
8. When the fluid level is acceptable, insert the level gauge and secure it in position.

**⚠ CAUTION**

- **Use a clean container when adding the power steering fluid. Never use a container that has held any other types of oil or fluid. Foreign matter in the fluid could result in a failure.**
- **Avoid adding more fluid than specified.**
- **Insufficient oil can make the steering heavy or noisy and can damage power steering components.**

**⚠ WARNING**

- **Close the tank cap firmly; otherwise power steering fluid will leak and could catch fire. Also wipe clean spilt fluid.**
- **If the power steering fluid level becomes abnormally low, fluid may be leaking. Have the steering system inspected by an authorized dealer.**

## Filter elements

### 1 Oil filter replacement

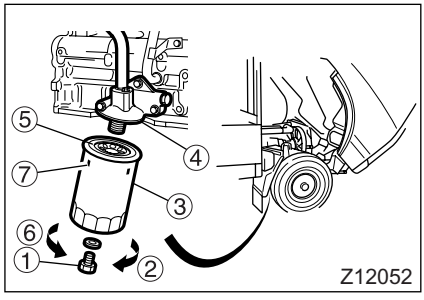
| | |
|---|---|
| Replacement intervals | Every 10,000 km (6,000 miles) or every 12 months |

**⚠ CAUTION**

- **Oil filter element must not be cleaned and reused. Always replace the filter element with a new one.**
- **Replace the oil filter element simultaneously with engine oil change.**

**⚠ WARNING**

- **Spilt engine oil should be wiped off clean. Oil remaining on the engine surface could catch fire.**
- **Do not replace the oil filter immediately after operating the vehicle since the engine, transmission, exhaust pipe, engine oil, and other items will be extremely hot. If you try to replace the oil filter immediately after driving the vehicle, you may be scalded. Give the engine time to cool before starting the job.**




1. Tilt the cab. ⇨ P. 12-5
   With a Crew-cab model, uncover the engine inspection opening. ⇨ P. 12-4
2. Clean the filter and the surrounding area to prevent dirt from entering the new element.
3. Place a container under the oil filter. Remove the drain plug ① from the bottom of the oil filter, and allow the oil in the filter to drain out.
4. Turn filter element assembly ③ in the direction of the arrow ② (see figure) to remove it. If the assembly is hard to turn, use a filter wrench (available from an authorized dealer).
5. Check the surface of the filter head ④ that will make contact with the new element for dirt and contamination. If necessary, clean it.
6. Replace the filter element assembly with a new one. The replacement part should be a genuine part.
7. Install the filter element assembly using this procedure:
   Apply a thin coat of engine oil to gasket ⑤ on the mounting surface of the filter element assembly. Turn the assembly in the direction of the arrow ⑥ until the gasket touches the sealing surface of the filter head.
   From this point, additionally tighten the filter element assembly by three-fourths of a turn.
   The element assembly has four equally spaced marks ⑦ around its outside.
   Tighten the assembly with reference to these marks.
8. Refill with engine oil.
   If the filter element assembly is replaced but the engine oil is not replaced, add the amount of oil shown below via the oil filler.

| | |
|---|---|
| Amount of engine oil to be added | Approx. 1 liter (1.1 qts) |

9. Start the engine and check for oil leakage.
10. Stop the engine and, after letting it stand for more than 30 minutes, check the oil level.

### 2 Fuel filter replacement

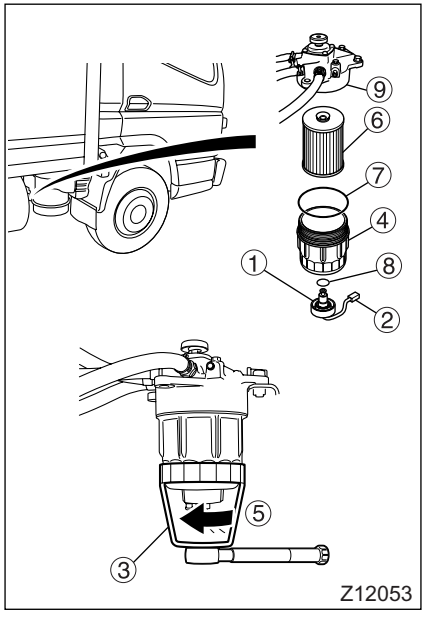
| | |
|---|---|
| Replacement intervals | Every 20,000 km (12,000 miles) or every 12 months |

**⚠ WARNING**

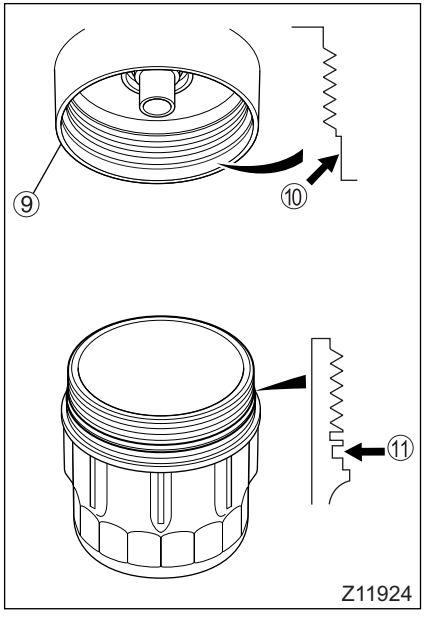
- **Fuel is highly flammable and should be kept away from hot objects and open flames owing to the risk of fire or explosion. Wipe up any spilt fuel.**
- **After installing the fuel filter, confirm that no fuel is leaking out. Leaking fuel could cause a fire or explosion.**
- **Use only the fuel filter specified for your vehicle. Use of other filters could cause fuel to leak and cause a fire or explosion.**
- **When replacing the fuel filter element, be sure to use the special tool to remove and reinstall the fuel filter. If the fuel filter is tightened to an inappropriate torque when reinstalled, fuel could leak and the filter itself could become damaged, possibly resulting in a fire and/or explosion. If you do not have the special tool, please contact an authorized dealer.**
- **Be careful not to damage the filter case, as this could cause fuel leakage.**
- **Keep cigarettes and other sources of heat away from the vehicle while replacing the fuel filter. They are dangerous because they could set fire to the fuel.**
- **When replacing the fuel filter, you will be working in a tight space. Be careful not to injure yourself on the edges of nearby components.**

**⚠ CAUTION**

- **Fuel filter element must not be cleaned and reused.**
- **Always replace with a new, genuine fuel filter element. Do not use the filter element beyond the recommended replacement intervals. Failure to observe these may damage the fuel injection parts.**



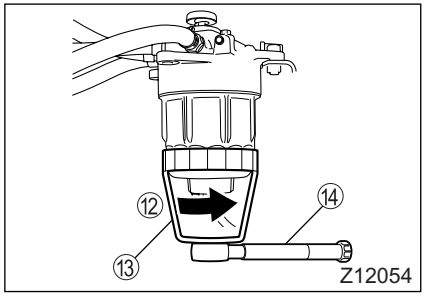

1. Confirm that the parking brake lever is pulled. Prevent the vehicle from moving by blocking the wheels with chocks.
2. Clean the filter and the surrounding area to prevent dirt from entering the new element.
3. Place a can under the fuel filter to catch fuel.
4. Disconnect the connector ② on the sensor ①.
5. Turn the sensor counterclockwise to loosen it, and then extract all of the fuel from the filter case ④. After the fuel has been extracted, tighten the sensor by turning it clockwise.
6. Place the sensor and its harness inside the special tool ③ (available from an authorized dealer).
7. Remove the filter case using the special tool (available from an authorized dealer), by turning it in the direction of the arrow ⑤. Drain the fuel from the filter case.
8. Remove the element ⑥ and the sensor from the filter case.
9. Replace the O-ring ⑦ and O-ring ⑧ with new ones. Apply a thin coat of engine oil to each of the new O-rings and install the O-ring ⑦ on the filter case and the O-ring ⑧ on the sensor.




10. Clean the surfaces ⑩ of the filter head ⑨ and filter case that will come in contact with the O-ring ⑦. The O-ring groove ⑪ on the filter case should also be cleaned.
11. Install the element with the hole of its end facing upward. Be sure to use a genuine replacement element.

## ⚠ CAUTION

- **Use the O-rings that are supplied with the new replacement element.**
- **When installing the filter case, be careful not to let the O-ring twist and be damaged.**
- **Do not reuse the element.**




12. Install the filter case by turning it in the direction of the arrow ⑫. Tighten the filter case using the special tool ⑬ (available from an authorized dealer) and a torque wrench ⑭ to within the following torque range.

| | |
|---|---|
| Tightening torque | 30 ± 2 N·m (22 ± 1.5 ft.lbs., 3 ± 0.2 kgf·m) |

**⚠ CAUTION**

**Do not tighten the filter case too strongly. Overtightening could damage the filter case.**

13. Install the sensor to the filter case and connect the connector.

| | |
|---|---|
| Sensor tightening torque | 5 ± 1 N·m (3.7 ± 0.7 ft.lbs., 0.5 ± 0.1 kgf·m) |

14. Bleed the fuel system. ⇨ P. 13-27
15. Start the engine to test for fuel leakage.

### 3 Air cleaner cleaning and replacement

| | |
|---|---|
| Cleaning intervals | Every 5,000 km (3,000 miles) |
| Replacement intervals | Every 40,000 km (24,000 miles) |

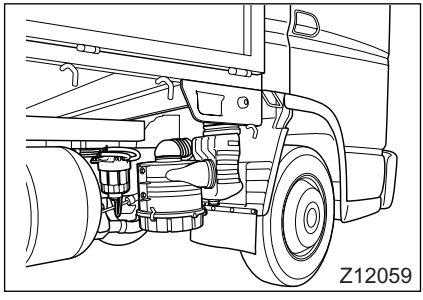
**⚠ WARNING**

**When cleaning air cleaner element, wear goggles and a mask to protect your eyes and respiratory organs from dust.**
**And, use a dust collector to prevent dust from dispersing into the surroundings.**

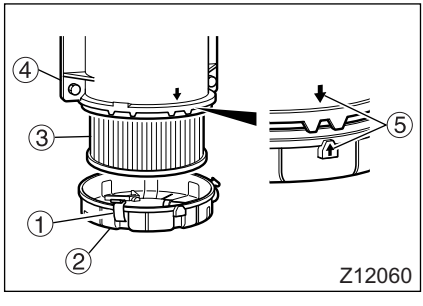
**⚠ CAUTION**

**Clean the air filter at the specified cleaning intervals. Unnecessary frequent cleaning can damage the element, allowing dust and other foreign matter to be drawn into the engine.**

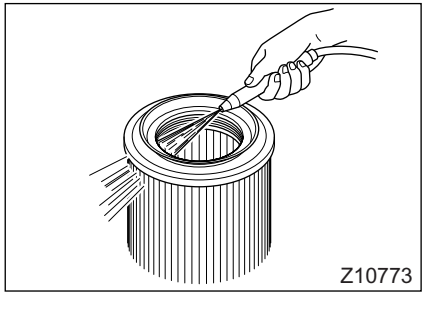
*NOTE:*
*Even if the cleaning interval has not elapsed, clean or replace the element if clogging of the element causes a decrease in engine output.*




The air cleaner is located in the illustrated position.



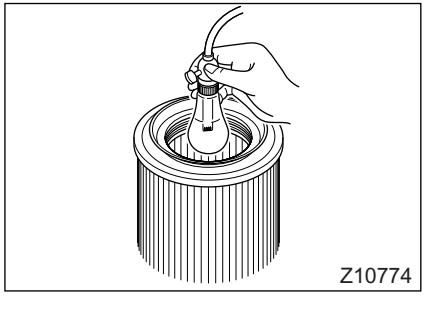

1. Undo the three clamps ① and remove the cover ②.
2. Pull element ③ straight down to remove.




3. From the inside of the element, blow compressed air evenly up and down along the pleats of the filter paper.

## ⚠ CAUTION

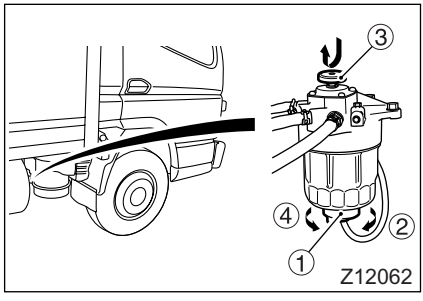
- **Keep the air pressure under 685 kPa (100 psi, 7 kgf/cm$^2$) to prevent the element from being damaged.**
- **Do not strike the element or hit it against another object.**
- **If the element is contaminated with oily soot or dust, replace it regardless of the scheduled replacement time.**




4. Place a light in the element and check the filter paper for damage or places where it has worn thin. Also check the packing for damage.
5. Clean the inside of case ④ and cover with a clean cloth.
6. Replace the element with a new one if the check reveals a defective filter element or when the recommended replacement interval expires.
   Use a genuine filter element for replacement.
7. Install the element by reversing the order of removal. Be sure to align match marks ⑤ on the case and cover.

## ⚠ CAUTION

**Install the element correctly.**
**If the packing is broken or the wing nut is loose, the engine will suck in dust and premature piston and cylinder liner wear could result.**




## Draining water from fuel filter

If the warning lamp lights up, there is water in the fuel filter in an amount exceeding the limit.
Drain the water as follows:

### ⚠ WARNING

- **Fuel is highly flammable and should be kept away from hot objects and open flames owing to the risk of fire or explosion. Wipe up any spilt fuel.**
- **Keep cigarettes and other sources of heat away from the vehicle while draining water from the fuel filter. They are dangerous because they could set fire to the fuel.**
- **Be careful not to injure yourself on the edges of nearby components while draining water from the fuel filter.**

1. Prepare a receiver for water.
2. Disconnect the connector on the sensor ①, then turn the sensor in the direction of the arrow ② to loosen it; the water will flow from the pipe at the end of the sensor.
   Operating priming pump ③ helps quicken the draining (press the pump handle approximately 7 times).
3. When fuel begins to flow out, close the drain port by tightening the plug in the direction of the arrow ④.
   Connect the connector.

| | |
|---|---|
| Tightening torque | 5 ± 1 N·m (3.7 ± 0.7 ft.lbs., 0.5 ± 0.1 kgf·m) |

4. Bleed the fuel system. ⇨ P. 13-27
5. Start the engine and check that fuel does not leak.

**⚠ WARNING**

- **The drain contains not only water but also fuel.**
  **Be sure to wipe clean the surfaces around the fuel filter to remove all splashed fuel. Fuel remaining on the surfaces could cause a fire.**
- **Make sure fuel does not leak from the filter or from related parts. Any fuel leakage could cause a fire.**

## Engine coolant – check and replacement

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check |
| Replacement intervals | Every 24 months |

If the coolant becomes very dirty, replace it immediately regardless of the specified replacement intervals.

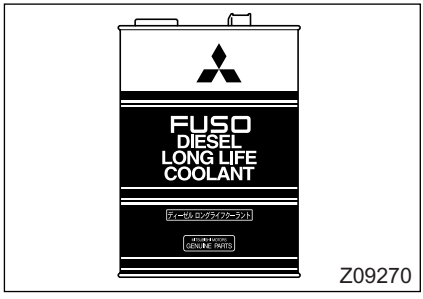
### 1 Recommended coolant

Use a coolant containing the FUSO DIESEL LONGLIFE COOLANT additive and soft water in the specified proportions.
Having both corrosion preventive and anti-freezing properties, the additive protects the cooling system all year around.
Replace and top off the coolant only with water containing FUSO DIESEL LONGLIFE COOLANT or an equivalent.

### 2 Water used with coolant

Use soft water with the properties shown in the following table. Do no use hard water from wells and rivers as it is liable to form scales and cause corrosion.

| | |
|---|---|
| Total hardness | 300 ppm or less |
| Sulfate $SO_4^{--}$ | 100 ppm or less |
| Chloride $Cl^-$ | 100 ppm or less |
| Total dissolved solids | 500 ppm or less |
| pH | 6 to 8 |



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### 3 Using coolant additive

To prevent the cooling system freezing up and minimize corrosion, use FUSO DIESEL LONGLIFE COOLANT or an equivalent. FUSO DIESEL LONGLIFE COOLANT is an ethylene-glycol-based antifreeze (SAE J814-C) with both anti-freeze and anti-corrosion properties. Dilute it with soft water to the specified concentration.

**⚠ DANGER**

- **FUSO DIESEL LONGLIFE COOLANT IS TOXIC. IF A PERSON HAS ACCIDENTALLY SWALLOWED IT, FORCE HIM/HER TO VOMIT AND CONSULT A DOCTOR IMMEDIATELY. IF IT SPLASHES IN THE EYES, IMMEDIATELY FLUSH THE EYES WITH WATER FOR MORE THAN 15 MINUTES, AND SEEK MEDICAL ATTENTION.**
- **SHOULD FUSO DIESEL LONGLIFE COOLANT COME IN CONTACT WITH YOUR SKIN, IMMEDIATELY WIPE IT OFF, AND THEN THOROUGHLY WASH YOUR SKIN WITH LOTS OF CLEAN WATER AND SOAP. IF YOU FEEL UNWELL OR PAIN ON YOUR SKIN, IMMEDIATELY SEEK MEDICAL ATTENTION.**
  **IN THE EVENT OF CONTACT WITH YOUR CLOTHES, IMMEDIATELY FLUSH FUSO LONGLIFE COOLANT WITH WATER AND SOAP.**
- **DO NOT USE FUSO DIESEL LONGLIFE COOLANT IN A CLOSED OR POORLY VENTILATED SPACE. SHOULD YOU INHALE A LARGE AMOUNT OF GAS OF FUSO DIESEL LONGLIFE COOLANT, MOVE TO A PLACE WITH FRESH AIR AND KEEP YOURSELF WARM AND AT REST. IF YOU FEEL NAUSEOUS OR OTHERWISE ABNORMAL, IMMEDIATELY SEEK MEDICAL ATTENTION.**
- **CLOSE THE CAP OF THE FUSO DIESEL LONGLIFE COOLANT CONTAINER IMMEDIATELY AFTER USING THE PRODUCT.**
- **DO NOT STORE FUSO DIESEL LONGLIFE COOLANT WHERE CHILDREN COULD REACH AND ACCIDENTALLY DRINK IT.**
- **FUSO DIESEL LONGLIFE COOLANT IS FLAMMABLE; AVOID EXPOSING IT TO OPEN FLAME.**
- **WHEN HANDLING FUSO DIESEL LONGLIFE COOLANT, WEAR AN ORGANIC GAS MASK, PROTECTION GOGGLES, OIL-RESISTANT GLOVES, AND/OR PROTECTIVE APRON AS NECESSARY.**

## ⚠ CAUTION

**Do not use methanol-based or methoxypropanol-based antifreeze products since these can severely damage the engine. If a different additive has been used and the FUSO DIESEL LONGLIFE COOLANT is to be used, be sure to thoroughly flush the cooling system.**

Use the following table to determine the correct concentration of FUSO DIESEL LONGLIFE COOLANT according to the lowest temperature at which your vehicle is to be operated.

FUSO DIESEL LONGLIFE COOLANT concentration (in volume percentage)

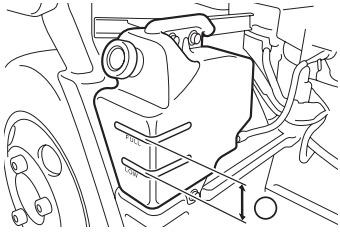
| Lowest temperature °C (°F) | –10 (14) or higher | –15 (5) | –20 (–4) | –25 (–13) | –30 (–22) | –35 (–31) | –40 (–40) |
|---|---|---|---|---|---|---|---|
| Concentration (%) | 50 | 50 | 50 | 50 | 50 | 55 | 60 |

| | |
|---|---|
| Coolant quantity | Approx. 16 liters (17qts) |

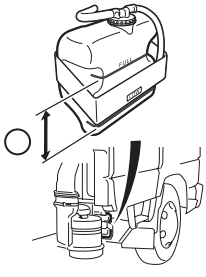
*NOTE:*
*Vehicles are shipped with a 50% concentration of FUSO DIESEL LONGLIFE COOLANT and can therefore be used at temperatures down to –30°C (–22°F).*

## ⚠ CAUTION

**Use FUSO DIESEL LONGLIFE COOLANT at a concentration of between 50% and 60%. The proper concentration under normal temperatures is 50%. At a concentration below 30%, this additive performs poorly as an anticorrosive, while at a concentration exceeding 60%, it performs poorly as an antifreeze.**



<Crew-cab models>



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## 4 Check

*NOTE:*

- *Always check the coolant level before starting the engine when the coolant temperature is low. When the coolant gets hot, it expands, making the level look higher than it actually is.*
- *Deposition may occur in the reserve tank but this will not cause any problem.*

- The coolant level is sufficient if it is between the "FULL" and "LOW" marks on the coolant reservoir tank.
- If the coolant level is below the "LOW" line, make sure coolant is not leaking from the cooling system then add coolant until it reaches the "FULL" line.
- Check for coolant leakage from the radiator and radiator hoses.
  If you find water on the ground from which your vehicle has been moved after parking, coolant is probably leaking.
- If the coolant level is abnormally low and quickly drops again when coolant has been added, coolant may be leaking from the cooling system. Have the vehicle inspected by your nearest authorized dealer.

## 5 Adding coolant

### ⚠ CAUTION

- **Coolant should normally be added through the reservoir tank without opening the pressure cap on the engine.**
- **When adding coolant, use new coolant additive of the same brand and concentration as the additive that is already in the vehicle.**
- **Adding only water reduces the concentration of the coolant already in the system, resulting in less protection against freezing and corrosion. Additional coolant should always contain the correct proportions of the additive and soft water.**

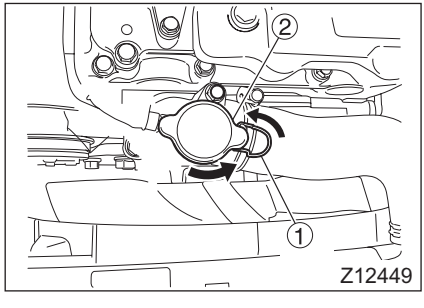
### 5.1 Adding coolant during pre-operation checks

1. If the coolant level is below the "LOW" mark, remove the cap from the reservoir tank, and refill the tank with a mixture of FUSO DIESEL LONGLIFE COOLANT and soft water to the "FULL" mark.
2. Refit the cap securely after adding coolant.

### 5.2 Adding coolant following an engine overheat

If the engine overheats, the amount of coolant may be insufficient not only in the reservoir tank but also in the main body of the radiator.

1. Allow the engine to cool down by keeping it running at a speed slightly higher than the specified idling speed.
2. When the needle in the coolant temperature gauge has come down to approximately the center of the scale, stop the engine and perform the following checks and corrective steps:
   - Check that coolant is not leaking from the radiator hoses or from any related part.
   - Check that the fan belt is not broken and that its tension is normal. ⇨ P. 12-55
3. Tilt the cab. ⇨ P. 12-5
   If the vehicle is a Crew-cab model vehicle, uncover the engine inspection opening. ⇨ P. 12-4
4. Undo the fastener ① then turn the pressure cap ② counterclockwise to remove it. If the coolant level is too low, add coolant until it reaches the opening.




**⚠ WARNING**

**Do not open the pressure cap before the needle in the coolant temperature gauge has come down to approximately the center of the scale. If you open the pressure cap too soon, hot coolant and steam will spray out and scald you. Only after the coolant has cooled down sufficiently, remove the pressure cap by gripping it in a folded piece of thick cloth and opening it slowly.**

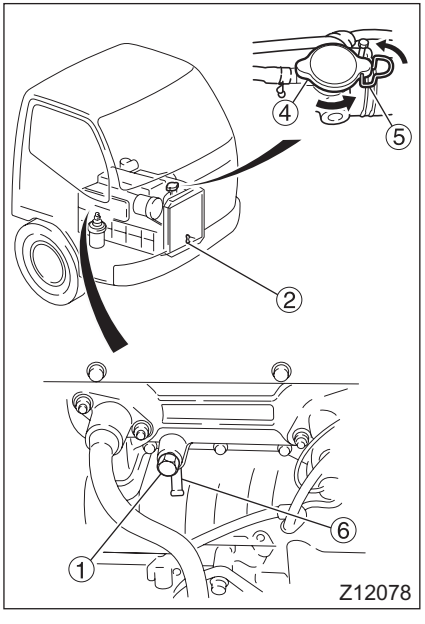
5. Refit the pressure cap by turning it clockwise, then securely retain the fastener in the groove on the engine.
6. Take the cap off the reservoir tank and add coolant until it reaches the “FULL” line. Refit the cap tightly.

## 6 Replacement

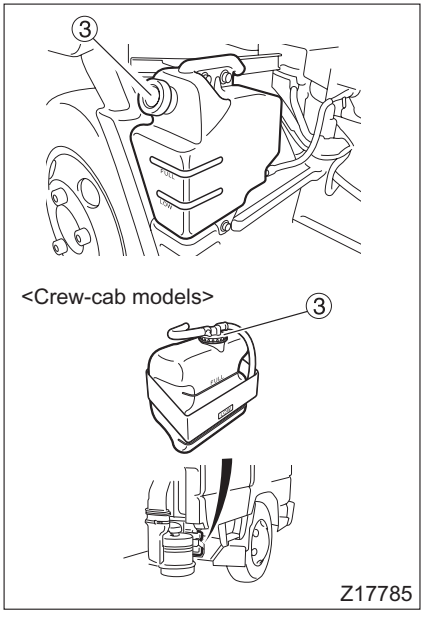
Be sure to flush the cooling system when replacing the coolant.

**⚠ WARNING**

- **Do not replace the coolant immediately after operating the vehicle since the engine, radiator, coolant, and other items will be extremely hot. If you try to drain the coolant immediately after driving the vehicle, you may be scalded. Give the coolant time to cool before starting the job.**
- **Before removing the pressure cap on the engine, grip it in a cloth and loosen it slowly to release the pressure.**
  **Do not remove the pressure cap on the engine when the coolant is hot since coolant may gush out and scald you.**
- **Tighten the pressure cap before operating the engine. If the engine speed is increased with the pressure cap left open, the coolant will overflow from the pressure cap opening as its temperature rises.**




1. Place a can under the engine drain plug ① and a can under the radiator drain cock ② to receive the coolant.




2. Remove the cap from the reservoir tank ③.
3. Tilt the cab. ⇨ P. 12-5
   If the vehicle is a Crew-cab model vehicle, uncover the engine inspection opening. ⇨ P. 12-4
4. Unlock the pressure cap ④ by raising the fastener ⑤. Remove the pressure cap by turning it counterclockwise.
5. Open engine drain plug and radiator drain cock to drain the coolant. Also drain the coolant in reservoir tank.

*NOTE:*
*By connecting an appropriate hose to the drain cock nipple ⑥, you can drain the coolant without it splashing.*

6. After the coolant has been completely drained, close both engine drain plug and radiator drain cock.

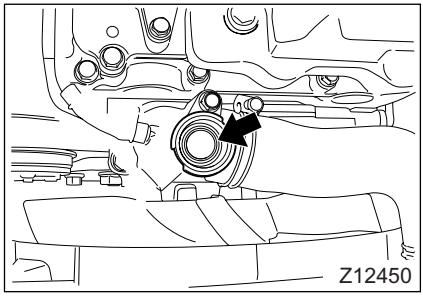
| Tightening torque | |
|---|---|
| Engine drain plug | 24.5 ± 4.9 N·m (18.1 ± 3.6 ft.lbs., 2.5 ± 0.5 kgf·m) |
| Radiator drain cock | 1.5 ± 0.3 N·m (1.1 ± 0.2 ft.lbs., 0.15 ± 0.03 kgf·m) |

7. Flush the cooling system.
   Pour soft water (preferably after heating moderately) through the pressure cap opening. Refit the pressure cap tightly by turning it clockwise. Lower the cab.
   Start the engine, then run the engine at a medium range RPM until the water temperature gauge needle points the center of the scale, and continue running the engine for about 10 minutes more from that point. Stop the engine and discharge the water. Remember that the water is very hot.
   Repeat the above procedure until the water is free of dirt.

## ⚠ CAUTION

**If the radiator tubing is clogged or coolant is more contaminated than usual, have your vehicle inspected at an authorized dealer.**

8. Make sure the radiator drain cock and engine drain plug are securely fitted.
9. Tilt the cab. If the vehicle is a Crew-cab model vehicle, uncover the engine inspection opening.

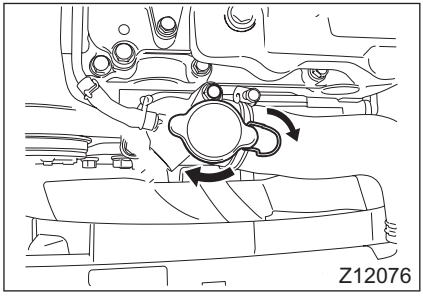



10. Pour coolant (FUSO DIESEL LONGLIFE COOLANT plus soft water) up to the top of the pressure cap opening. Pour the coolant slowly to prevent air from mixing with it.
11. Check that the coolant level in the pressure cap opening does not go down, then fit the pressure cap (turn it clockwise until it is tight) and press down the fastener to lock the pressure cap in place.

## ⚠ CAUTION

**If air is not completely removed from the cooling system, this may lead to reduced cooling efficiency and engine parts failure. After replacing the coolant, drive the vehicle and then check the coolant level.**

12. Lower the cab.
13. Fill the reservoir tank with the coolant (FUSO DIESEL LONGLIFE COOLANT plus soft water) to the “FULL” line, then replace the cap.
14. Start the engine and keep it running at a speed slightly higher than the specified idling speed to expel air from the cooling system. When the needle in the coolant temperature gauge reaches approximately the center of the scale, allow the engine to idle for 10 more minutes then stop it.
15. When the engine has cooled, open the pressure cap and, if the coolant level is too low, add coolant until it reaches the top of the pressure cap opening.
16. Screw the pressure cap down tightly by turning it clockwise.
    Lock the pressure cap by pressing down the fastener.
17. Run the engine a few more minutes to make sure that there are no coolant leaks.
18. Make sure that the coolant level in the reservoir tank is in the specified range. Add coolant if necessary.




### 7 Cleaning the intercooler and radiator core

If the intercooler or front of the radiator core is plugged with mud or dust, cooling efficiency will be reduced leading to rust. Clean the radiator core at regular intervals.

## V-belts – check and adjustment

An excessively loose or tight belt could cause the engine to overheat, the battery to be inadequately charged, or the alternator or water pump to malfunction. Always keep belts adjusted to the proper tension.

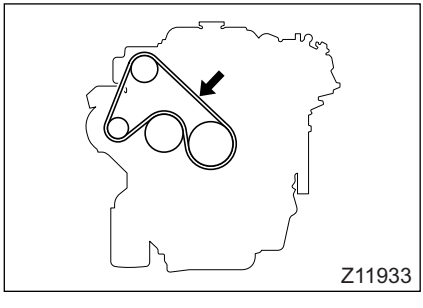
| | |
|---|---|
| V-belt inspection intervals | At the time of pre-operational check and every 10,000 km (6,000 miles) or every 12 months |

**⚠ WARNING**

**Always stop the engine before inspecting or adjusting belts.**
**Ensure that the engine cannot be started while you are performing checks or adjustments.**

**⚠ CAUTION**

**Prevent the V-belt from any contact with oil or grease during check and adjustment.**
**If soiled with oil or grease, the belts will slip and this will shorten their service life.**




### 1 Check

1. Confirm that the parking brake lever is pulled. Prevent the vehicle from moving by blocking the wheels with chocks. Tilt the cab. ⇨ P. 12-5
   If the vehicle is a Crew-cab model, uncover the engine inspection opening under the assistant driver's seat. ⇨ P. 12-4
2. Press the belt with an approximately 98 N (22 lbs., 10 kgf) force at the point midway between the pulleys, and measure the amount of deflection.
3. If the deflection is not as specified below, the tension of the belt must be adjusted.

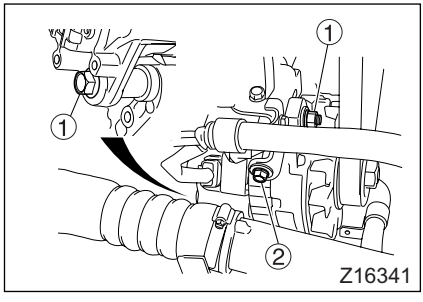
| Belt tension [Amount of deflection when the belt is pressed with a 98 N (22 lbs., 10 kgf) force at the point midway between the pulleys] | | |
|---|---|---|
| Fan belt | Vehicles without air conditioner | New belt (when installed): 9 to 11 mm (0.35 to 0.43 in.) |
| | | Used belt (when inspected or reinstalled): 11 to 13 mm (0.43 to 0.51 in.) |
| | Vehicles with air conditioner | New belt (when installed): 7 to 9 mm (0.28 to 0.35 in.) |
| | | Used belt (when inspected or reinstalled): 10 to 11 mm (0.39 to 0.43 in.) |

4. Also, check the belts for damage.

## 2 Adjustment

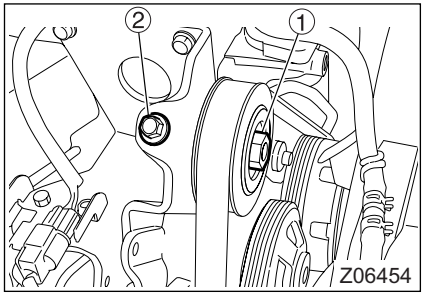
**⚠ WARNING**

**Never perform belt tension adjustments when the engine is running.**




### 2.1 Vehicles with air conditioner

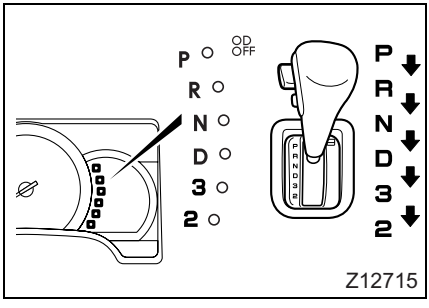
1. Tilt the cab. ⇨ P. 12-5
   If the vehicle is a Crew-cab model vehicle, uncover the engine inspection opening. ⇨ P. 12-4
2. Slightly loosen the upper and lower alternator mounting bolts and nuts ①.
3. Turn adjusting bolt ② to obtain proper belt tension. Turning the bolt clockwise increases the tension.
4. After adjustment, firmly tighten the alternator mounting nuts.




### 2.2 Vehicles without air conditioner

1. Tilt the cab. ⇨ P. 12-5
   If the vehicle is a Crew-cab model vehicle, uncover the engine inspection opening. ⇨ P. 12-4
2. Loosen the tensioner pulley mounting nut ① approximately half a turn by using a 22 mm (7/8 in.) offset wrench.
3. Turn adjusting bolt ② to obtain proper belt tension. Turning the bolt clockwise increases the tension.

4. After adjustment, firmly tighten the tensioner pulley mounting nuts.




## Range selector lever – check

<Automatic transmission vehicle>
If any abnormality is found in the following checks, do not drive the vehicle. Contact to an authorized dealer.

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check and every 30,000 km (18,000 miles) or every 6 months |

*NOTE:*
*Be sure to check with the engine stationary.*

1. Confirm that the parking brake is fully applied.
2. Set the starter switch in ON position.
3. While shifting the range selector lever to each position, check the following.
   - Check if the range selector lever operates smoothly and clicks at each range position (“P” position through “2” position).
   - Check if the shift indicator lamp indicates the selected range.
4. Return the range selector lever to “P” position. Turn the starter key to LOCK position and check if the key can be removed from the key cylinder.

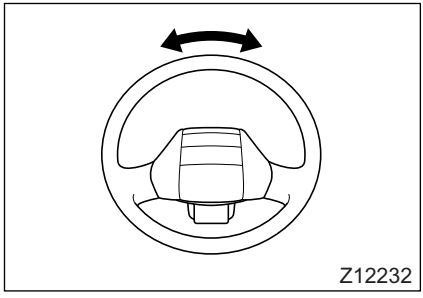
## Steering wheel – check

The steering wheel is a safety-critical part of the vehicle. If an inspection reveals any abnormality, contact an authorized dealer and have the abnormality rectified before you again drive the vehicle. Driving the vehicle with the abnormality unrectified could result in a serious accident.

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check and every 10,000 km (6,000 miles) |

**⚠ WARNING**

**Perform the checks in a safe place that provides good visibility all around. During the checks, be sufficiently attentive to surrounding traffic conditions.**




## 1 Steering wheel play

1. Make sure the parking brake is securely applied.
2. If your vehicle is equipped with a manual transmission, make sure that the gearshift lever is in the neutral position. If your vehicle is an automatic transmission vehicle, make sure that the range selector lever is in the "P" position.
3. With the engine running, check the steering wheel play as follows:
   From its straight-ahead (neutral) position, turn the steering wheel clockwise and counterclockwise to the point where a resistance is first felt for each direction, and measure the amount of the steering wheel movement between these points (steering wheel play). If the steering wheel play is out of specification, contact an authorized dealer.

| | |
|---|---|
| Steering wheel play | 5 to 50 mm (0.2 to 1.97 in.) or less on the periphery of steering wheel |

*NOTE:*
*The above check must be performed with the engine running.*

## 2 Steering wheel looseness

1. Try moving steering wheel up and down and also right and left to check for excessive looseness.
2. If anything abnormal is found, contact an authorized dealer.

*NOTE:*
*Make sure the lock lever that is used for steering wheel adjustment is securely locked.*

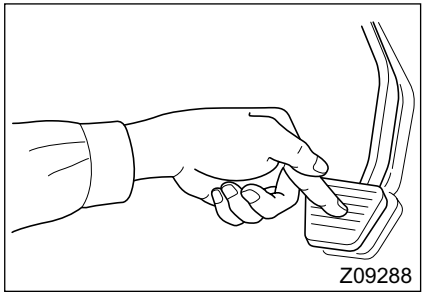
## 3 Steering wheel operation

1. While driving slowly, make sure that the steering wheel does not shake and the vehicle does not pull to one side. Also check for excessive operating resistance and unsmooth return to the neutral position.
2. If any abnormal condition is encountered during the above check, call an authorized dealer for inspection.

## Service brakes – check

The service brakes are safety-critical parts of the vehicle. If an inspection reveals any abnormality, contact an authorized dealer and have the abnormality rectified before you again drive the vehicle. Driving the vehicle with the abnormality unrectified could result in a serious accident.

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check |


Z09288

### 1 Brake pedal play

<Vehicles other than FE85>

1. Make sure the engine is not running.
2. Make sure the parking brake is securely applied.
3. If your vehicle is equipped with a manual transmission, make sure that the gearshift lever is in the neutral position. If your vehicle is an automatic transmission vehicle, make sure that the range selector lever is in the “P” position.
4. Pump the brake pedal several times to release all the vacuum from the brake system (zero vacuum).
5. Measure the distance over which the brake pedal moves when the center of the pedal pad is pressed with light finger force to the point where resistance is felt (brake pedal play). Check whether the distance is within specification.

| | |
|---|---|
| Brake pedal play (at center of pedal pad) | 0.1 to 3 mm (0.0039 to 0.12 in.) |

6. If the brake pedal play is not as specified, have the pedal inspected and adjusted by an authorized dealer.

<FE85>

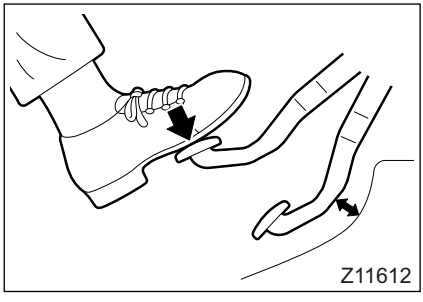
The FE85 has a hydraulic brake booster. Perform the check as follows:

1. Make sure the engine is not running.
2. Make sure the parking brake is securely applied.
3. If your vehicle is equipped with a manual transmission, make sure that the gearshift lever is in the neutral position. If your vehicle is an automatic transmission vehicle, make sure that the range selector lever is in the “P” position.

4. Measure the distance over which the brake pedal moves when the center of the pedal pad is pressed with light finger force to the point where resistance is felt (brake pedal play). Check whether the distance is within specification.

| | |
|---|---|
| Brake pedal play<br>(at center of pedal pad) | 0.1 to 3 mm<br>(0.0039 to 0.12 in.) |

5. If the brake pedal play is not as specified, have the pedal inspected and ajusted by an authorized dealer.

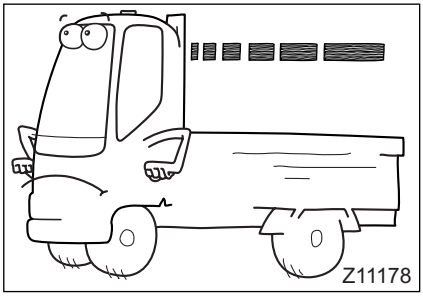



## 2 Brake pedal stroke

- Start the engine and allow it to idle.
- Fully depress the brake pedal. Check whether the distance between the fully depressed pedal and the floor is within specification.

| | |
|---|---|
| Fully depressed brake pedal to floor clearance | 20 mm (0.79 in.) or more |

- If the pedal-to-floor clearance is insufficient or the pedal feels spongy when depressed, brake fluid leakage or presence of air in the brake hydraulic system may be a cause.
  Have the brake system inspected by an authorized dealer if the above conditions are detected.




## 3 Braking performance

Perform braking tests in a safe place. After checking that warning lamp BRAKE, LOW VACUUM or DISC BRAKE is not illuminated, drive the vehicle at a low speed to make sure that braking power is sufficient and even. If braking seems in any way abnormal, operating the vehicle could be dangerous. Ask an authorized dealer for a more thorough inspection.

**⚠ WARNING**

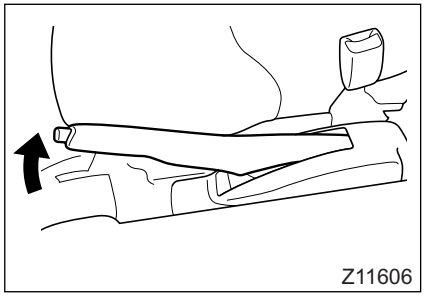
**Perform brake tests in a safe place that provides good visibility all around. During the tests, be attentive to surrounding traffic conditions.**

### 4 Hydraulic brake booster performance

<FE85>
Before starting the engine, depress the brake pedal to check that the brake system auxiliary electric pump operates. If the pump does not operate, have an authorized dealer perform necessary inspection.

## Parking brake – check and adjustment

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check |


Z11606

### 1 Parking brake lever stroke check

1. Depress the brake pedal firmly so that the vehicle cannot move.
2. Starting with the parking brake lever in the fully released position, pull the parking brake lever with a force of 295 N (66 lbs., 30 kgf) until it stops moving. Check whether the lever stroke (the distance moved by the lever) is within specification. If the stroke is out of specification, have the vehicle inspected by an authorized dealer.

| | |
|---|---|
| Parking brake lever stroke | 7 to 9 notches |

3. Make sure the parking brake lever locks securely in the pulled position.

### 2 Braking performance

Stop the vehicle on a dry downgrade, set the parking brake and check to see if the parking brake can hold the vehicle. If an appropriate downgrade is not available, drive the vehicle at 8 km/h (5 mph) and activate the parking brake to make sure that it exhibits satisfactory braking action.
If parking brake performance is in any way abnormal, vehicle operation could be dangerous. Contact an authorized dealer.

**⚠ WARNING**

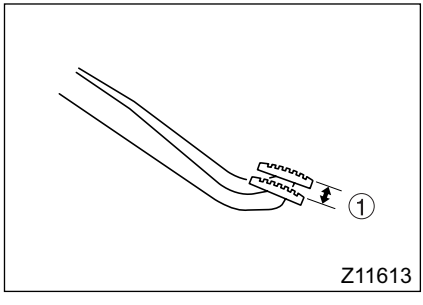
**Perform brake tests in safe place that provides good visibility all around. During the tests, be sufficiently attentive to surrounding traffic conditions.**

## Clutch – check

<Manual transmission vehicles>

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check and every 10,000 km (6,000 miles) |

Check the clutch for condition. If anything abnormal is found, see an authorized dealer.




### 1 Clutch pedal play

| | |
|---|---|
| Clutch pedal play (at center of pedal pad) | 0.2 to 4 mm (0.0079 to 0.16 in.) |

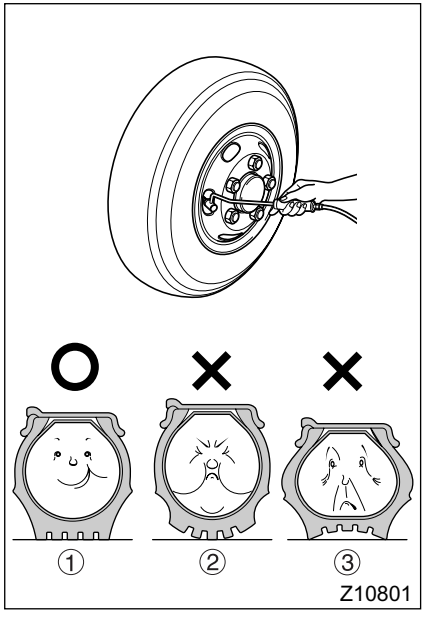
1. Make sure the engine is not running.
2. Make sure the parking brake is securely applied.
3. Make sure the gearshift lever is in the neutral position.
4. To check clutch pedal play, use your finger to press the center of the pedal pad to the point where resistance is felt and measure the distance over which the pedal has moved (play) ①. If the degree of play is not as specified above, adjustment is necessary.
   Have any necessary adjustment made by an authorized dealer.

### 2 Clutch operation

Make sure that the clutch pedal operates without unusual noise or excessive resistance. Check also that depressing the clutch pedal allows you to move the gearshift lever easily to the various gear positions, and that the clutch engages smoothly without slipping when the clutch pedal is released slowly.

## Tires – check

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check and every 10,000 km (6,000 miles) |




### 1 Inflation pressure check

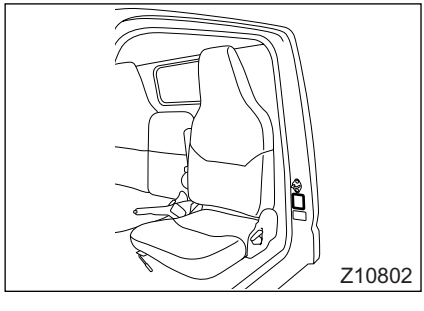
- Tire pressure should be checked and adjusted before driving when the tires are still cool. Make sure that the tire air valve caps are securely fitted.
- You can roughly judge the air pressure from the form of the tire tread, but need to use an air gauge for precise measurement. If your vehicle uses low-profile tires, the air pressure must be checked using an air gauge.

  ① Properly inflated
  ② Excessively inflated
  ③ Insufficiently inflated

  If the tires appear incorrectly inflated, make any air pressure adjustments necessary before driving.

Standard inflation pressure

| Model | Tire size | Inflation pressure kPa (psi, kgf/cm$^2$) |
|---|---|---|
| FE83<br>FE84 | LT215/85R16-10PR (Load Range E) | 550 (80, 5.5) |
| FE85 | 215/75R17.5 124/123L (Load Range F) | 690 (100, 7.0) |
| FG | LT235/85R16-10PR (Load Range E) | 550 (80, 5.5) |




- There is a plate affixed to the driver's door pillar indicating standard inflation pressure.

**⚠ WARNING**

- **Excessively low or high tire pressures not only give a poor ride but also could cause cargo to be damaged. Under-inflated or over-inflated tires are also very dangerous and can be easily damaged. Moreover, if the pressure is too low, tires could overheat and burst.**
- **Both the inner and outer tires on dual wheels should be inflated to the same pressure.**
- **You need not increase tire pressure before high-speed driving.**
- **Tires should be handled with care due to their high internal air pressure.**

**⚠ CAUTION**

- **Your vehicle's tires will heat up during use, with a corresponding increase in air pressure. This is normal; do not release air from the tires when they are hot.**
  **Always check tire pressures before driving, when the tires are cold.**
- **Pay particularly close attention to the air pressure in new tires. New tires tend to stretch slightly as they settle, with a corresponding decrease in air pressure.**
- **Never fail to install tire valve caps after checking or adjusting the air pressure.**
  **Unless the valve caps are replaced, foreign matter may interfere with the valves and cause air to leak out.**

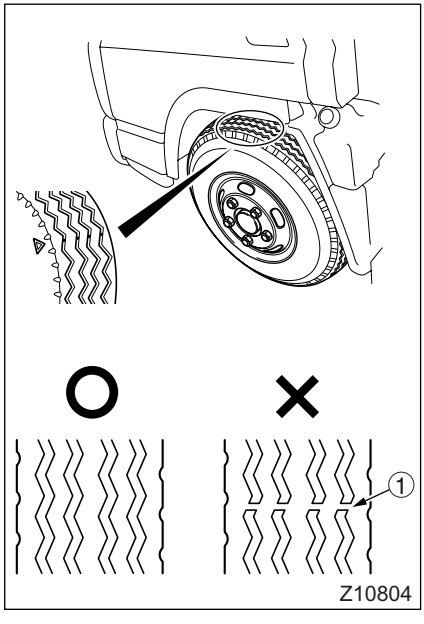
*NOTE:*

- *The tire inflation pressures will be higher just after vehicle operation than before vehicle operation. The increases in pressure are not abnormal; they occur because the air in the tires expands as the tires get hot while the vehicle is moving. Do not release air from the tires at this time. The pressures will return to normal as the tires cool down.*
- *The pressure drops naturally as time passes. You should therefore check the tire pressure regularly at least once a month using an air gauge.*

## 2 Checking tread depth

Check the entire circumference of each tire to make sure that the remaining depth of the tread pattern on the part that contacts the road surface is sufficient.

| | |
|---|---|
| Tread groove depth limit | 1.6 mm (0.06 in.) |

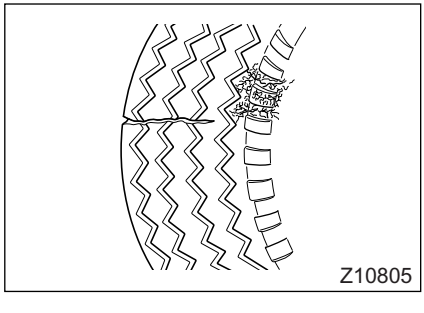



When the tread wears down, slip signs ① (interrupted sections of the grooves) appear across the tire at the locations corresponding to the △ marks. Replace the tire as soon as the slip signs show up as continued use is dangerous. ⇨ P. 12-66

**⚠ WARNING**

**If the remaining tread is too shallow, the tires tend to skid and chances of "hydroplaning" during high speed driving increase. Worn tires should be replaced as soon as possible.**

*NOTE:*
*Hydroplaning can occur when driving on a wet roads at high speeds. When a vehicle hydroplanes, tires ride up on and slide over a film of water, causing the driver to lose control of both steering and braking.*




## 3 Checking for cracks, damage, and objects embedded in tread

Check both the tread and the sides of each tire for cracks, damage, and excessive or unusual wear. Check also for metal pieces, nails, and stones that might be embedded in the tread or caught between the tires of dual wheels.

**⚠ WARNING**

**Severely damaged or worn tires are susceptible to puncture during use and should be replaced as soon as possible.**

## Tire replacement

### 1 Preparation for tire replacement

- Park the vehicle on a flat, hard surface. Pull the parking brake all the way on. If your vehicle has a manual transmission, place the gearshift lever in the neutral position. If your vehicle has an automatic transmission, place the range selector lever in the “P” position.
- Be sure to stop the engine.
- If you get a flat tire while on the road and need to change it on the spot, pull up your vehicle in a safe place where it will not block traffic, and activate your hazard warning lamps to flash and use a red or white flag or cloth to give warning to passing vehicles.
- Have all passengers get out of the vehicle.
- Block the tire diagonally opposite to the tire to be replaced with a chock.

  Example:
  Block the left front tire if the right rear tire is to be replaced.

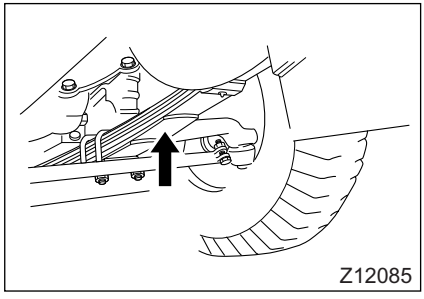
- Prepare a replacement tire.

*NOTE:*
- *Your vehicle is not provided with a replacement tire as standard equipment.*
- *Applicable tires are as follows.*

| Model | Tire size |
|---|---|
| FE83<br>FE84 | LT215/85R16-10PR<br>(Load Range E) |
| FE85 | 215/75R17.5 124/123L<br>(Load Range F) |
| FG | LT235/85R16-10PR<br>(Load Range E) |

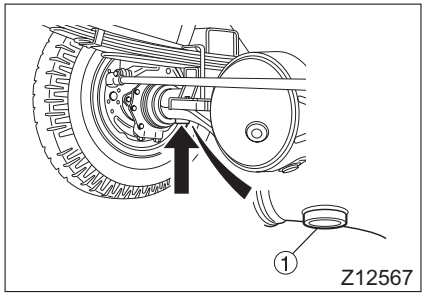
## 2 Removing the wheel

### 2.1 Front axle jacking points




- FE

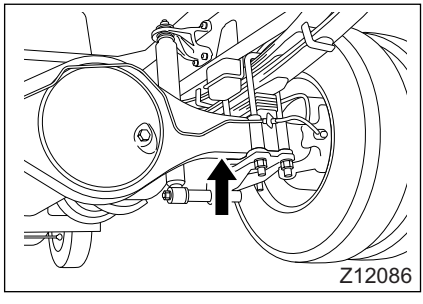
Bottom surface of the leaf spring at the rear of tie rod.




- FG

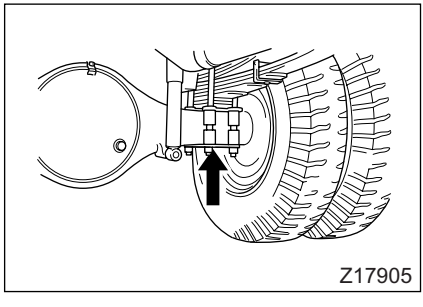
Jack support ① under the front axle.

### 2.2 Rear axle jacking point




- FE

Bottom surface of the axle housing (beside leaf spring U-bolt mounting)




- FG

Bottom surface of the axle housing

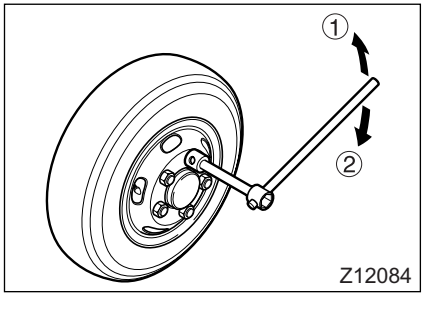
### 2.3 How to remove a wheel

**⚠ WARNING**

- **After raising the vehicle slightly, confirm that the jack is securely in position.**
  **If the jack slipped out of position with the vehicle fully raised, the vehicle could fall and cause a serious injury.**
- **Apply the jack only to designated jacking points. Applying the jack elsewhere could damage the vehicle and cause the jack to slip out of position.**
- **Never rock or climb below the vehicle when it is jacked up since movement of the jack could result in a serious injury or in damage to the vehicle.**
  **Never start the engine when the vehicle is jacked up.**
- **It is dangerous to leave the vehicle jacked up for long periods. If you need to raise the vehicle for an extended period, support it with suitable stands placed against the bottom surfaces of the frame.**

1. Securely apply the parking brake. Apply chocks to the front and back (as seen from the side of the vehicle) of the wheel diagonally opposite the one that is to be jacked up.
2. Position the jack under the jacking point of the vehicle and raise the vehicle to a point at which the tire is still touching the ground.

*NOTE:*
*Socket wrenches for use in jacking up the vehicle or loosening/tightening the wheel nuts are not included in the onboard tools.*




3. Slightly loosen the wheel nuts by turning them in the illustrated direction. Do not remove the nuts.

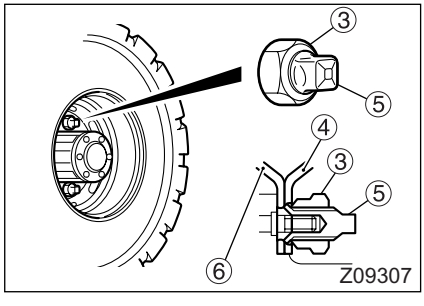
   ① For right-hand wheel
   ② For left-hand wheel

*NOTE:*
*The wheel nuts on the right-hand wheel are marked with "R" and have right-hand threads. Those on the left-hand wheel are marked with "L" and have left-hand threads.*

**⚠ WARNING**

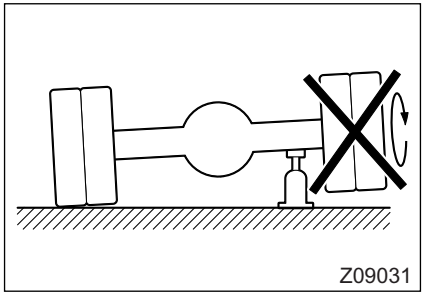
- **Fit the socket wrench securely on the wheel nut. If fitted improperly, the wrench will slip off the nut, and could cause injury.**
- **Do not loosen the wheel nuts too much or you could damage the threads.**

4. Jack up the vehicle until the tire is just clear of the ground.
5. Remove the wheel nuts and then the tire.
6. To remove the tires of a rear dual-wheel, first loosen the outer wheel nuts ③ and remove outer tire ④; then lower the jack, loosen inner wheel nuts ⑤ and jack up the vehicle again to remove inner tire ⑥.



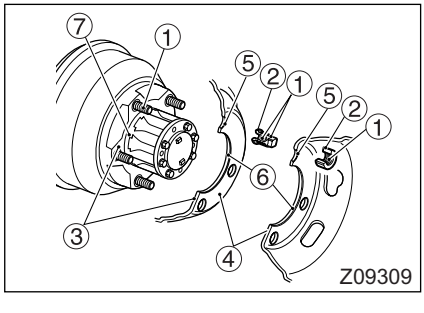

**⚠ WARNING**

- **Do not rotate the jacked-up wheel if the vehicle has a limited-slip differential. Power would be transmitted to the wheel in contact with the ground, and the vehicle could move as a result.**
- **When removing wheels, be careful not to damage the wheel bolts and the threads of the inner wheel nuts.**




### 3 Mounting the tire

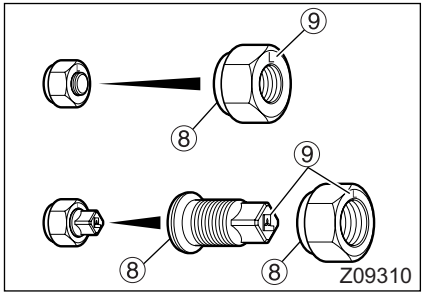
1. Clean the following sections before mounting the wheel. If they are dirty, the wheel nuts could become loose during driving.




① Threads on wheel bolts and nuts
② Spherical surface of wheel nuts
③ Disc wheel mounting surface
④ Disc wheel mating surface
⑤ Wheel nut contact surface on disc wheel
⑥ Disc wheel inside surface
⑦ Guide sections on hub

**⚠ WARNING**

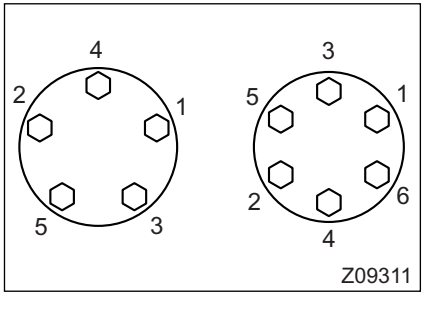
- **If the above items are dirty, the nuts will become loose during vehicle operation. If wheel bolt or nut threads are damaged or the disc wheel is cracked or otherwise damaged, replace the wheel with a new genuine part. A damaged wheel could work loose and cause a serious accident while the vehicle is in motion.**
- **Do not paint disc wheel mounting surfaces, dual wheel mating surfaces, wheel nut seating surfaces, and wheel hub mounting surfaces as resulting thicker paint film could cause the wheel nuts to loosen up.**




2. Mount the wheel so that the wheel bolts line up with the bolt holes in the disc wheel. Then, tighten the wheel nuts to hold the disc wheel in position. If the wheel nut has a spherical end ⑧, direct the spherical end toward the disc wheel.

*NOTE:*
*The wheel bolts and nuts on the right-hand wheels have right-hand threads, and those on the left-hand wheels have left-hand threads.*
*The bolts and nuts have stamped marks ⑨ for easy identification; an "R" mark for right-hand wheels and an "L" mark for left-hand wheels.*

3. Lower the vehicle gently until the tire makes contact with the ground.

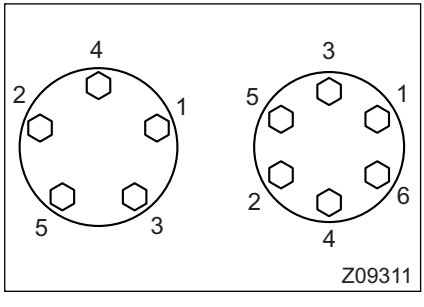



4. Tighten the wheel nuts in the order shown in the illustration, repeating the tightening cycle 2 to 3 times. Finally, tighten the nuts to the specified torque.

| | |
|---|---|
| Tightening torque | 440 to 540 N·m<br>(325 to 398 ft.lbs., 45 to 55 kgf·m) |

**⚠ WARNING**

- **Fit the socket wrench securely on the wheel nut. If fitted improperly, the wrench will slip off the nut, and could cause injury.**
- **Do not jump or jerk on the wrench handle when tightening the nut by using your own weight. Doing so can overtighten the nut. Overtightening the nuts could overstrain the bolts or deform the disc wheel's surface.**
- **The wheel nuts must be tightened to the specified torque. If the nuts are tightened loosely or too tight, parts may be damaged and wheels may come off. Such status may lead to impossibility of driving, and result in damage of the vehicle and physical injury.**




5. Mount dual rear wheels as described below.

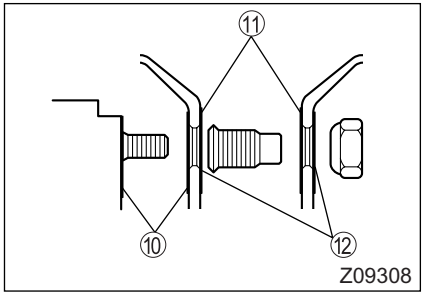
**⚠ WARNING**

**When replacing an outer wheel of a dual rear wheel, be sure to retighten the inner wheel nuts before tightening the outer wheel nuts.**

*NOTE:*
*When installing dual wheels, make sure that the air valve of the inner wheel is not lined up with the air valve of the outer wheel.*

Mount the inner wheel, then jack up the vehicle again. Set the outer wheel such that the wheel bolts are located in the centers of the disc wheel's bolt holes, then tighten the wheel nuts just enough to eliminate looseness.
Lower the vehicle, then tighten the wheel nuts in the illustrated sequence. Work through the sequence two or three times, finally tightening each wheel nut to the specified torque.

6. If only the outer wheel of dual wheels is replaced, retighten the inner wheel nuts to the specified torque before mounting the outer wheel.




**⚠ WARNING**

- **The wheel nuts must be tightened to the specified torque. If the nuts are tightened loosely or too tight, parts may be damaged and wheels may come off. Such status may lead to impossibility of driving, and result in damage of the vehicle and physical injury.**
- **When replacing the wheel, take care not to damage the threads on the wheel bolts and inner wheel nuts.**
- **As the vehicle is driven after a wheel has been replaced, the wheel nuts loosen up somewhat during the early stages of driving due to "wear-in." Therefore, it is necessary to retighten the wheel nuts to the specified torque after driving 50 to 100 km (30 to 60 miles). Thereafter, retighten the nuts at regular intervals.**
- **Do not paint disc wheel mounting surfaces ⑩, dual wheel mating surfaces ⑪, wheel nut seating surfaces ⑫, and wheel hub mounting surfaces as resulting thicker paint film could cause the wheel nuts to loosen up.**
- **Be sure to use the specified type of tires. Mixing bias and radial tires results in poor steering and should be avoided at all costs.**

## Wheel nuts – check and retightening

| | |
|---|---|
| Inspection intervals | Every 10,000 km (6,000 miles) |

With a new vehicle, perform the first inspection after 4,000 km (2,500 miles).

**⚠ WARNING**

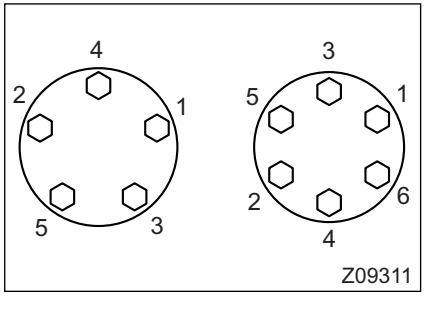
**After changing a tire, the wheel nuts will loosen somewhat during the initial stages of driving due to "wear-in." Therefore, retighten the wheel nuts to specification after you have driven 50 to 100 km (30 to 60 miles).**

Using a torque wrench, check for loose wheel nuts and tighten as necessary.

| | |
|---|---|
| Wheel nut tightening torque | 440 to 540 N·m (325 to 398 ft.lbs., 45 to 55 kgf·m) |

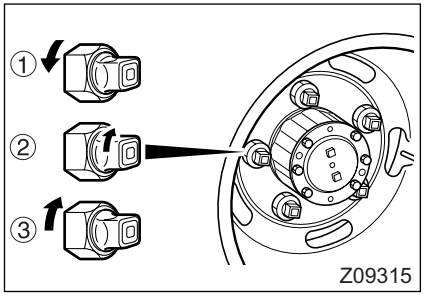
**⚠ WARNING**

- **A loose wheel nut could cause parts damage, and result in a tire falling off. This could result in impossibility of driving, and damage of the vehicle and physical injury. Be sure to check the wheel nuts regularly.**
- **Fit the socket wrench securely on the wheel nut. If fitted improperly, the wrench will slip off the nut, and could cause injury.**




- **Single tire**

Tighten the wheel nuts to the specified torque. Follow the diagonal tightening sequence indicated in the figure.




- **Dual wheels**

Retighten the wheel nuts using the following 2-process procedure.

1st process

① Loosen the outer wheel nuts as follows:
5-bolt type: Loosen the nuts numbered 1 – 2 – 3 or 4 – 5 in the figure in this order.
6-bolt type: Loosen the nuts numbered 1 – 4 – 5 or 2 – 3 – 6 in the figure in this order.

② Tighten the inner wheel nuts corresponding to the loosened outer wheel nuts to the specified torque.

③ Tighten the loosened outer wheel nuts to the specified torque.

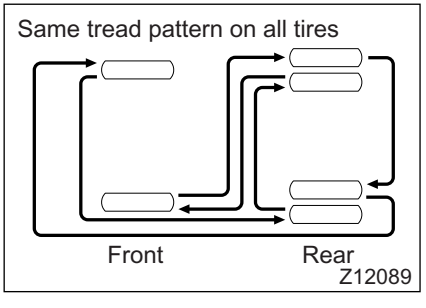
2nd process

④ Perform the above steps ① through ③ for the remaining outer wheel nuts and inner wheel nuts.

**⚠ WARNING**

**In the case of dual wheels, one often retightens outer wheel nuts while forgetting to retighten inner wheel nuts. Always follow the above procedure to tighten all the nuts.**

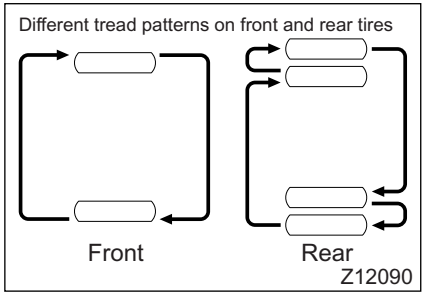
*NOTE:*
*The wheel bolts and nuts on the right-hand wheels have right-hand threads, and those on the left-hand wheels have left-hand threads.*
*The bolts and nuts have stamped marks for easy identification; an "R" mark for right-hand wheels and an "L" mark for left-hand wheels.*




## Tire rotation

The amount of wear on a tire depends on its position on the vehicle. To equalize wear and extend life as much as possible, rotate the tires at regular intervals.

| | |
|---|---|
| Tire rotation intervals | Every 10,000 km (6,000 miles) |




- Use a tire of the same type on a single axle. If different type tires are mounted on an axle, the vehicle tends to pull to one side during braking, and could cause you to lose directional control of the vehicle.
- Applicable tires are as follows.

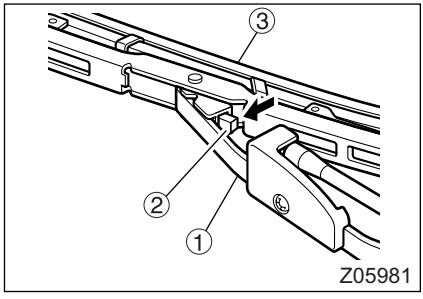
| Model | Tire size |
|---|---|
| FE83<br>FE84 | LT215/85R16-10PR<br>(Load Range E) |
| FE85 | 215/75R17.5 124/123L<br>(Load Range F) |
| FG | LT235/85R16-10PR<br>(Load Range E) |

**⚠ WARNING**

- **Be sure to use the specified type of tires. Mixing bias and radial tires results in poor steering and should be avoided at all cost.**
- **As the vehicle is driven after a wheel has been replaced, the wheel nuts loosen up somewhat during the early stages of driving due to "wear-in". Therefore, it is necessary to retighten the wheel nuts to the specified torque after driving 50 to 100 km (30 to 60 miles). Thereafter, retighten the nuts at regular intervals.**

**⚠ CAUTION**

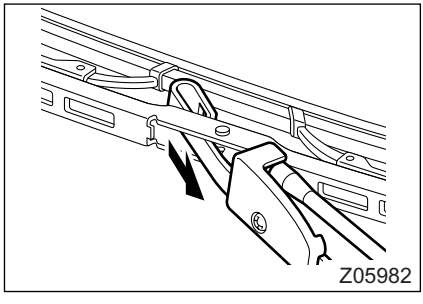
- **Break in new tires by driving 200 km (125 miles) or more at 60 km/h (37 mph) or less. After this run-in period, check tire pressure.**
- **If using different tread patterns on the front and rear wheels, select tires with a ribbed tread for the front wheels and tires with a traction-type tread for the rear wheels.**



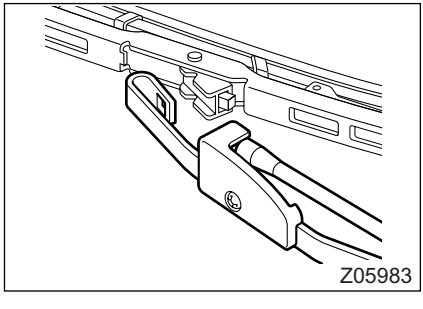

## Wiper blade – replacement

### 1 Replacing wiper blade

1. Raise wiper arm ①, and then push clip spring ② in the direction of the arrow (see figure).



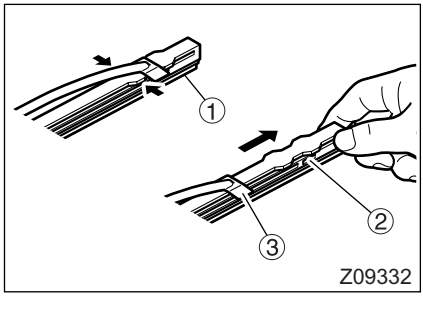

2. With the clip spring kept in the pushed position, press wiper ③ toward the wiper arm.




3. The wiper blade will come off the wiper arm.
   Install a new blade in the reverse order of removal.
   Use a genuine replacement part.

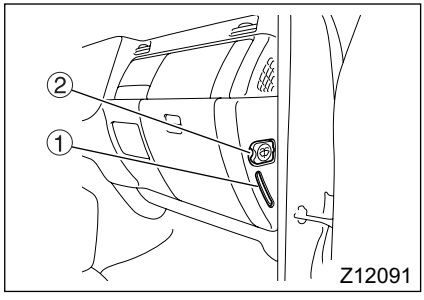
**⚠ CAUTION**

**Do not bring the wiper arms back into position or operate the wipers without wiper blades, as this could scratch the windshield.**




### 2 Replacing blade rubber only

1. Raise the wiper arm.
   Pinch both sides (indicated by arrows) of blade rubber ① with your fingers and then pull the blade rubber so that claws ③ are unhooked from grooves ② in the blade rubber.
2. Slide out the blade rubber.
3. Replace the old blade rubber with a new genuine wiper blade rubber.
   To install, reverse the removal procedure. Make sure that the claws fit into the grooves in blade rubber.




## Windshield washer – fluid level check and refilling

### 1 Fluid level check

Check the washer fluid level through level check window ①.
When the level has dropped to the lower part of the window or is not visible at all, refill the tank with washer fluid.

### 2 Refilling

1. Open the assistant driver's door.
2. Open windshield washer tank cap ② and pour in a mixture of windshield washer fluid and tap water until the level reaches the top of the check window.
3. Close the cap tightly after refilling.

| | |
|---|---|
| Windshield washer fluid quantity | Approx. 3.0 liters (3.2 qts) |

### ⚠ CAUTION

- **Substituting soapy water for washer fluid could result in clogged washer nozzles or spots on painted surfaces.**
- **Operating the washer continuously for more than 20 seconds or when there is no fluid in the reservoir could burn out the washer motor.**

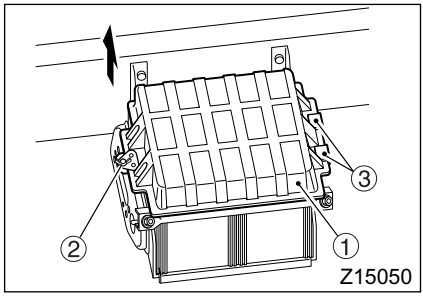
*NOTE:*
*When it is very cold, the ratio of windshield washer fluid to water should be increased in order to prevent the mixture from freezing up.*

## Battery – check

| | |
|---|---|
| Inspection intervals | At the time of pre-operational check |

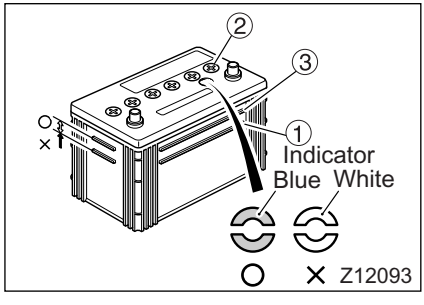
**⚠ WARNING**

- **The battery generates flammable hydrogen gas and should be kept away from open flame and spark.**
- **When removing the battery, always disconnect the negative (–) terminal first and reconnect it last. A spark can occur if a tool touches the positive (+) terminal and frame with the negative (–) terminal connected.**
- **When handling the battery, wear safety goggles to protect your eyes.**
- **Perform all battery checks with the engine turned off.**




### 1 Removal and installation of battery cover

1. Remove the screw ② fastening the cover ① and raise the left end of the cover by about 50 mm (1.97 in.).
2. Slide the cover leftward to disengage it from the right stopper ③.
3. Follow the above steps in reverse to reinstall the battery cover. Check that the installed cover is securely held in position.




### 2 Inspecting the battery

The battery's charge level is indicated by color of the indicator on the top surface.
The battery is correctly charged when the indicator is blue. If the indicator is white, the battery is not correctly charged and the battery fluid level should be checked as follows:

1. If the battery fluid level is below the "LOWER LEVEL" line ①, remove the 6 vent plugs ② and add distilled water via the vent plug holes until the battery fluid level is between the "UPPER LEVEL" ③ and "LOWER LEVEL" lines. Replace the vent plugs and then change the battery.

2. If the battery fluid level is correct, or between the "UPPER LEVEL" and "LOWER LEVEL" lines, simply recharge the battery.
   Replace the battery if the indicator does not turn blue after charging.

**⚠ DANGER**

**BATTERY FLUID IS DILUTE SULFURIC ACID AND CAN HARM MOST THINGS IT TOUCHES, INCLUDING HUMAN SKIN AND CLOTHING. IF YOU GET IT ON YOUR SKIN OR CLOTHING, FLUSH IT OFF WITH SOAP AND WATER. IF YOU ACCIDENTALLY GET BATTERY FLUID IN YOUR EYES, WASH YOUR EYES WITH LOTS OF CLEAN WATER THEN PROMPTLY SEE AN EYE DOCTOR FOR TREATMENT.**

**⚠ WARNING**

**Do not use the battery with the fluid below the "LOWER" level line. The battery would deteriorate rapidly, and it could overheat or explode.**

**⚠ CAUTION**

- **Whenever battery fluid has been added, either charge the battery or run the vehicle for a while. It is especially important in cold weather as the battery can freeze up and be damaged.**
- **Do not add so much fluid that the fluid in the battery rises above the "UPPER LEVEL" line. With the fluid above the "UPPER LEVEL", fluid could leak out and corrode the battery terminals.**
- **If you do not use the vehicle for an extended period, remove the battery.**

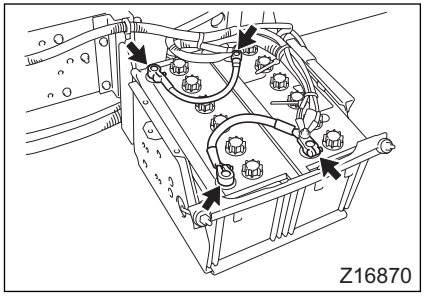
### 3 Cleaning the terminals

Use warm water and sodium bicarbonate (baking soda) to remove any white powder caused by corrosion.
If a terminal is seriously corroded, remove the battery cable and clean the terminal with a wire brush or sandpaper.
After cleaning, apply a thin coat of grease to the terminals.

## ⚠ CAUTION

**If the battery needs to be charged, remove it from the vehicle and remove the vent plugs where possible before starting the procedure. If it is charged in the vehicle due to unavoidable circumstances, be sure to disconnect the negative (–) battery cable.**

*NOTE:*
*Follow the correct procedure when jump starting a vehicle with a dead battery by connecting it to a live battery using a booster cable.* ⇨ *P. 13-25*

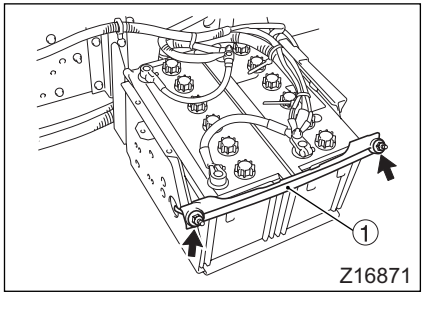

Z16870

### 4 Battery removal and installation

1. Disconnect the battery cables (each indicated by an arrow ➡ in the illustration) from the battery terminals.

## ⚠ WARNING

**When disconnecting the battery cables, disconnect the (–) cable first. When connecting the battery cables, connect the (–) cable last. If you accidentally touched the (+) terminal and the vehicle body with a tool with the (–) cable connected to the battery, a dangerous short circuit could occur.**



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2. Remove the battery support mounting nuts (each indicated by an arrow ➡ in the illustration).
3. Remove the battery support ①, then remove the battery.
4. Install the battery by performing these steps in reverse. After installing the battery, make sure it is securely retained.

## ⚠ WARNING

**Be sure to observe the following instructions when storing a battery.**

- **Select a storage place where the battery fluid will not freeze.**
- **The storage place must be free of any heat source and well ventilated.**
- **The battery must be kept out of reach of children.**
- **The battery must be placed with the terminals facing upward. Do not place the battery on its side. Doing so could cause battery fluid leakage and a fire.**

## ⚠ CAUTION

**Install the battery securely in position. If it is left loose, shocks and vibrations from road surface could damage the battery case and electrode plates, shortening battery life.**

## Cleaning DPF of ashes

Your vehicle is equipped with a diesel particulate filter (DPF) system. This device collects particulate matter (PM) contained in diesel engine exhaust with a ceramic filter and continuously regenerates the filter by the effect of the inside oxidation catalyst (this process is called oxidation removal of PM).
Although the collected PM is removed by combustion during the DPF regeneration process, the ashes resulting from the combustion continue to accumulate inside the filter unless removed manually.
In order to maintain the necessary level of system performance, you need to bring your vehicle periodically to an authorized dealer to have the DPF cleaned of ashes through the use of special cleaning equipment.

| | |
|---|---|
| Ash removal intervals | First 185,000 km/110,000 miles<br>Every 105,000 km/65,000 miles thereafter |

*NOTE:*
*If the DPF is replaced, the first ash cleaning must be performed at 185,000 km/110,000 miles from that time and the second and subsequent cleaning must be performed every 105,000 km/65,000 miles.*

## Air filters – cleaning

Remove and clean the air filters (heater or air conditioner filters) with water or compressed air to eliminate dust and dirt at regular intervals (6 months or so).
Clogged filters may cause inefficient heating or air-conditioning, and even malfunction of the blower motor.

**⚠ WARNING**

**When cleaning the air filters, wear a dust mask to avoid inhaling dust. Dust inhalation can have adverse health effects.**

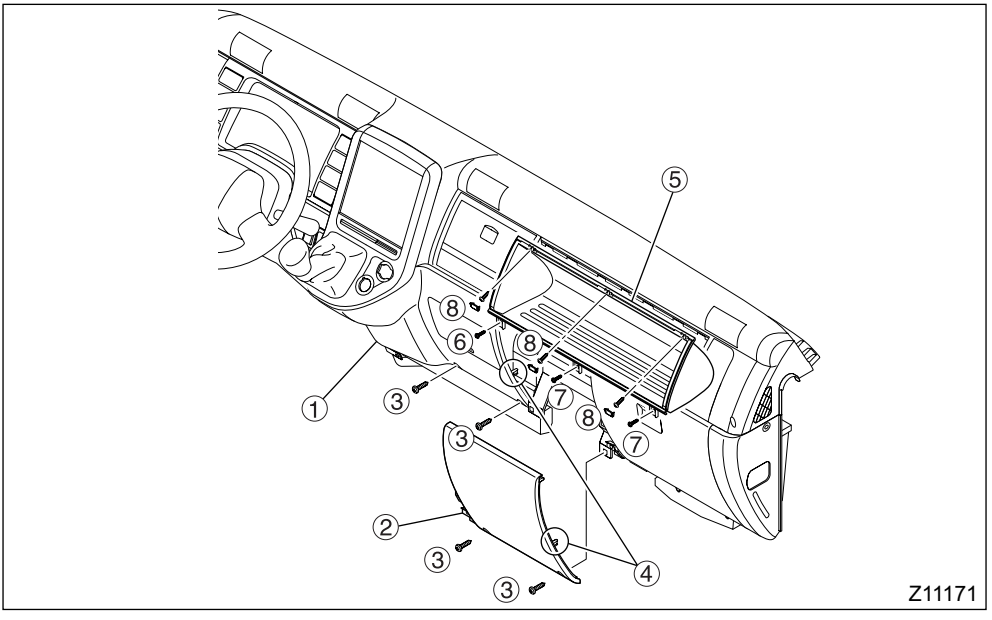
**⚠ CAUTION**

**Clean the air filters at shorter intervals if your vehicle is used frequently in dusty areas.**

### 1 Outside air filter

Disassembly is necessary before the outside air filter can be cleaned. Have an authorized dealer do the job.

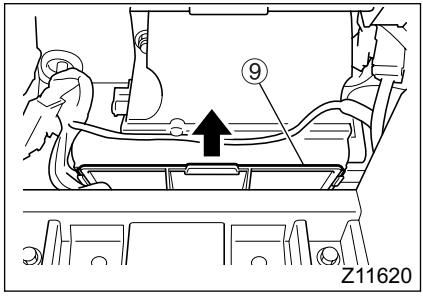
### 2 Dashboard air filter

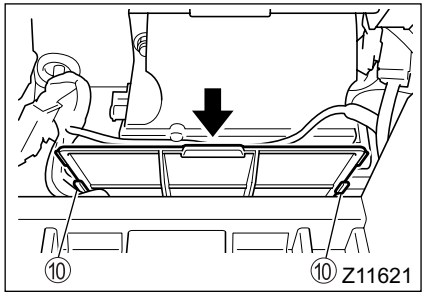



- Removal

1. Remove the four screws ③ that retain the bottom of the lower center panel ① and the bottom of the lower panel ②.
2. Release the tabs ④ on the lower panel and lower center panel, then remove the lower panel.
3. Remove the screw ⑥ that retains the bottom of the tray ⑤.

4. Open the glove compartment, then remove the two screws ⑦.
5. Remove the three sets of plugs and screws ⑧, then remove the tray.
6. Withdraw the air filter ⑨.




- Installation

1. Return the air filter to its original position by inserting it with its front facing you. Press the air filter securely into the guides ⑩ (one on each side at the top and two at the bottom).
2. Install the tray by performing the removal steps in reverse.
3. Install the lower panel and lower center panel in that order by performing the removal steps in reverse.

## Cleaning your vehicle

### ⚠ WARNING

- **Some cleaning fluids are poisonous or flammable. Carefully follow the safety precautions shown on the container.**
- **Use solvent-based cleaning materials only in a well ventilated area.**
  **Open the windows when using solvent-based cleaning materials in the cab.**
- **The following materials could injure you or damage the vehicle, and should not be used:**
  **Acetone, lacquer thinner, enamel thinner, nail enamel remover, and other volatile solvents; laundry soap, bleach, deoxidant, and other detergents; carbon tetrachloride, gasoline, benzene, naphtha, and other petrochemicals.**

## 1 Exterior cleaning

### 1.1 Cleaning glass surfaces

Keep the vehicle's windows and screens clean at all times. Use glass cleaner and wipe it off with a sponge or soft cloth.

**⚠ CAUTION**

**Never apply rubbing compound to glass since it leaves scratches.**

### 1.2 Washing

You must wash the vehicle whenever it has experienced any of the following:

- Been driven on coastal roads
- Been driven on roads where road chemicals have been applied
- Become contaminated by coal tar, smoke, soot, powder dust, iron powder, lime powder, sap, bird droppings, etc.
- Adhesion of dust and/or mud

Using a hose, wash the mud and dirt off the body surfaces. Wash not only the surfaces around the cab, but also the wheel housings and the underside of the chassis.

Especially after you have driven in a coastal area or on salted road in the winter, your vehicle should be given a thorough washing. Also try to wax the body surfaces once a month.

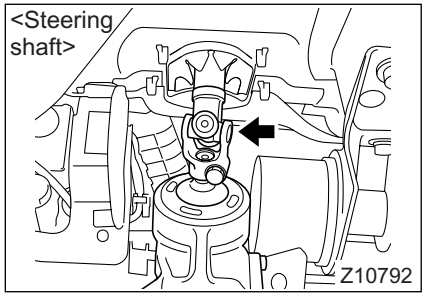
**⚠ WARNING**

**When washing the underside of the vehicle, be careful not to hurt yourself on the edges of panels and other parts.**

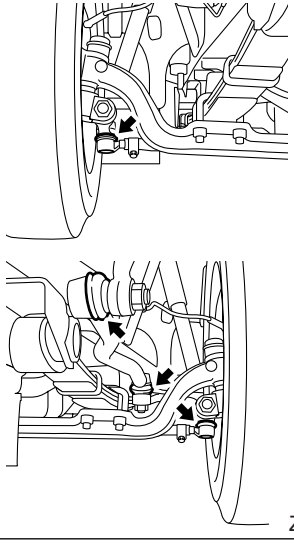
**⚠ CAUTION**

- **Wash the vehicle with luke-warm or cold water. Do not use very hot water.**
- **Avoid leaving the vehicle in direct sunlight.**
- **Avoid splashing water on the air intake port or the area where it connects to the engine. Especially when the vehicle is washed with the cab tilted, avoid allowing water to enter the engine through the air intake port.**
- **When washing the engine compartment and underside of the chassis, be careful not to expose the starter, alternator, connectors, and other electrical parts directly to steam or high-pressure water.**

- **Do not use concentrated soap or synthetic detergents.**
- **Rinse the detergent off with water. Take care that none remains on the paintwork since it could discolor the paint.**
- **Cleaning plastic parts with thinner or gasoline could result in cracking or discoloration.**
- **In cold weather, the key holes and rubber parts of the door sometimes freeze, making it hard to open the door. After washing, remove moisture on and around the doors. Applying silicone with antifreeze capabilities is one solution to this problem.**
- **Do not clean the interior by splashing water on it as this could damage relays, the computer, and other electrical devices.**
- **Thoroughly wash the vehicle, especially the wheelhouses and underside of the chassis after driving on coastal roads or roads where road chemicals have been applied. Thorough washing is also important if your vehicle is frequently used to transport marine products or lime because seawater will affect the vehicle and lime will severely damage the vehicle's paintwork. Road chemicals, if left deposited for a long time on vehicle parts, will set hard and be difficult to remove by ordinary washing. Wash out road chemicals using a high-pressure cleaning machine if necessary so that they do not remain on the vehicle. Road chemicals in large amounts as well as salt will easily cause rusting.**
- **When washing the underside of the vehicle, be careful not to direct water or steam from a high-pressure cleaner toward the steering shaft, the dust covers on the steering system, or the dust covers on the front axle for a long time at close range. Doing so could cause a malfunction.**
- **When stepping onto the bumper to clean the windshield, do not hold the wiper arms. Doing so could cause a wiper malfunction.**



<Dust cover on steering system, dust cover on front axle>



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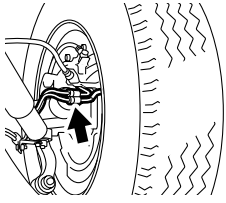
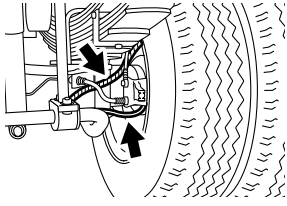
- **Do not use a vehicle-cleaning brush to clean the plastic lenses of the turn-signal lamps. A brush could scratch the lenses. Wash the lenses with water, then wipe them with a soft cloth.**
- **Do not direct steam from a high-pressure cleaner into the outside air inlets. Water would get into the cab, and the wiper motor could malfunction.**
- **When the vehicle is washed, braking performance can be reduced by water entering the brake drums or splashed over the brake discs. In this event, drive slowly with light pressure on the brake pedal to dry out the brakes. Pay attention to nearby vehicles while doing so.**

<Front wheel>



<Rear wheel>



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- **There are ABS electric wiring located behind the wheels. When removing snow or ice having adhered to the wheel areas after driving on snow-covered roads, be careful not to damage the ABS components and wiring. Also, avoid exposing the ABS components and wiring to high-pressure water or cleaner steam as the system could be damaged and not operate properly.**

### 1.3 Waxing

Wax the vehicle once or twice a month or whenever the wax on the vehicle ceases to repel water.
Apply wax out of direct sunlight and only when the vehicle's paintwork is cooler than human body temperature.

### 1.4 Dirt caked on paintwork

The following contaminants can cause corrosion, discoloration, or staining of the vehicle if not washed off: calcium chloride and other salts; road chemicals, oil; tar; tree sap; bird droppings; and industrial soot.
If you cannot easily clean off these contaminants, use a synthetic cleaner that does not scratch or otherwise damage painted surfaces.

### 1.5 Small chips and scratches

Chips, cracks, and scratches caused by grit thrown up off the road should be fixed as soon as possible. If the body metal is visible, corrosion will quickly set in and require expensive treatment. Your dealer can supply touch-up paint for small chips and scratches.

## 2 Rust and corrosion

- Rust and corrosion developing on the underside and/or undercarriage of the vehicle could cause an unexpected failure and even lead to an accident. Check these areas occasionally (such as after washing) for rust/corrosion and resulting holes. If rust is found, remove it using a wire brush and coat the affected area with a touchup paint or rust-preventive material. If you find a hole, have your vehicle repaired by an authorized dealer as soon as possible.
- To help keep your vehicle running reliably for a long time, you should conduct a detailed check for rust/corrosion at least once a year, and if necessary, apply touchup paint or rust-preventive material.

## 3 Interior cleaning

- Do not use any organic solvent (for example, thinner or gasoline) or any acidic or alkaline solvent. It could cause discoloration and/or stains.
- Dirt can leave marks or stains and should be cleaned off as soon as possible.
- Clean the interior of the vehicle with a sponge or soft cloth. Remove stubborn dirt with a soft brush.
- Use the appropriate cleaning technique for each interior item to avoid discoloration and stains.

- Do not water-wash the floor with the floor mat left in place as this could cause the floor to rust and could also damage the relays and other electrical components.
- If water collects in the cab, either remove the drain plug from the floor and allow the water to drain out or wipe up all the water using a cloth.

### 3.1 Cleaning interior trim

Keep the vehicle's interior trim clean at all times.

1. Clean out all dust on the trim with a vacuum cleaner or soft brush.
2. Wipe vinyl trim areas carefully with cloth dampened with water.
3. Wipe dirt and marks off the trim with a commercially available cleaner.

### 3.2 General dirt

A multi-purpose powder-type cleaner is recommended for cleaning general dirt. Soapsuds are also usable.

1. Clean out all loose dust with a vacuum cleaner or soft brush.
2. Dilute the cleaner in water to the specified concentration. The best results can usually be obtained with a thinner solution.
   When soapsuds are used, apply them with a sponge or soft cloth.
3. Wipe up any remaining cleaner with a towel or other absorbent cloth.
4. Finish cleaning by gently wiping the surface with a dry soft cloth to polish it.

### 3.3 Grease and oil

Use this method to remove contamination by grease, oil, butter, margarine, shoe polish, white coffee, chewing gum, beauty cream, vegetable oil, wax, crayon, tar, and asphalt.

- Wipe off the contamination, then apply a fabric cleaning solution.
- Shoe polish, wax, crayon, tar, and asphalt can stain the trim if not cleaned off quickly.
  Carefully use cleaner because it dissolve these contaminants and can cause a smudge.

### 3.4 Organic contaminants

Use this method to remove marks resulting from tomato ketchup, black coffee, egg, fruit, fruit juice, milk, cold drinks, wine, vomit, urine, and blood.

1. Wipe off the smudge, then wipe the area again with a damp sponge.
2. If the area is stained, apply a multi-purpose foam-type cleaner.
3. If the smell of vomit or urine lingers, dissolve 5 ml (0.17 fl oz.) of baking soda in 250 ml (8.5 fl oz.) of luke-warm water and use the solution to clean the affected area.
4. If necessary, lightly wipe the area with a fabric cleaning solvent.

### 3.5 Other contaminants

Use this method to remove contamination by candy, ice cream, mayonnaise, and chili sauce.

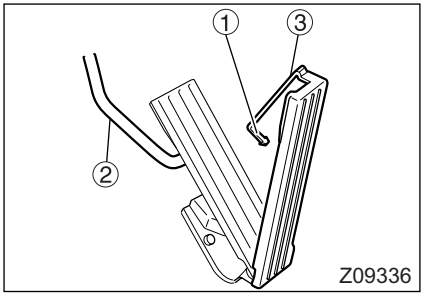
1. Carefully clean off the contamination, then wash the area with water and dry it.
2. If any spot remains, clean with a fabric cleaning solvent.

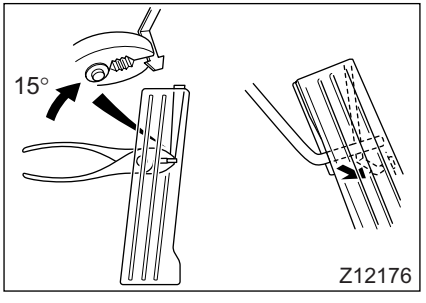
### 3.6 Cleaning vinyl surfaces

- Vinyl can usually be cleaned with warm water and mild soap, e.g., saddle soap.
- Apply a little soapy water and leave it for several minutes. Then, rub the area hard with a cloth wet in water. Repeat this process until the area is completely clean.
- Tar, asphalt, and shoe polish can leave stains if not cleaned off quickly.
  With a clean cloth impregnated with vinyl cleaner, wipe the area clean.

### 3.7 Cleaning seat belts

- Keep your vehicle's seat belts clean and dry at all times. Clean them with mild soap and luke-warm water. Never use gasoline, thinner, or other flammable liquids since these will weaken the webbing.
- Do not bleach or re-dye the webbing since this would seriously weaken it.




### 3.8 Removing floor mat for cleaning

When removing the floor mat for cleaning, you must raise the accelerator pedal by using the following method.

1. Hold the hooked end ① of stopper ③ with pliers and pull the stopper toward the front of the vehicle while twisting the hooked end through approximately 15 degrees to disengage the end from the pedal.
2. To return the pedal to the original state, fit accelerator arm ② inside the stopper, and force the hooked end of the stopper in the hole of the pedal.
3. Check to ensure that the stopper does not disengage.

## ⚠ CAUTION

**Do not use force to disengage the stopper from the pedal. Always pull it while twisting.**

After cleaning the floor mat, dry the felt backing before putting the mat back on the floor. When fitting the floor mat back in the vehicle, make sure it does not interfere with the accelerator pedal and other moving parts.

# 13. Useful advice for emergencies

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## Possible failures, causes and remedies

Performing daily checks and good maintenance are keys to preventing mechanical failures and the resultant accidents. Be sure to check and service your vehicle regularly.
Should your vehicle suffer a mechanical failure or malfunction, the measures needed to correct the problem can be found using the following chart.
If you are unable to correct the problem yourself or the problem persists after you have attempted to repair it, contact an authorized dealer for technical assistance.

**The engine does not start.**
**The starter does not turn over or turns over too slowly.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The starter switch fuse or high-current fuse is blown. | Replace the blown fuse or high-current fuse with a new one of the specified amperage. | 13-9 |
| Battery has run down. | Charge or replace the battery. | 13-25 |
| Battery cable is disconnected, loose or corroded. | Remove corrosion and connect the cable correctly. | 12-79 |
| Connection to ground terminal is open. | Connect securely. | – |
| Engine oil viscosity is too high. | Replace the oil with an oil of proper viscosity. | 12-22 |
| The starter is malfunctioning. | Have an authorized dealer perform necessary inspection. | – |

**The starter turns over normally.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Fuel has run out. | Refuel and bleed the system. | 13-27 |
| Air is present in the fuel system. | Bleed the system. | 13-27 |
| The fuel filter is clogged. | Replace the filter element. | 12-41 |
| Fuel is frozen. | Heat the fuel pipe with hot water [60°C (140°F) or less]. | – |
| The air cleaner is clogged. | Clean or replace the element. | 12-43 |
| The engine preheating time is insufficient. | Follow the preheating instructions. | 5-7 |
| The engine preheating circuit fuse is blown. <FE84, FE85, FG> | Replace the fuse. | 13-16 |
| The fuel injection system is malfunctioning. | Have an authorized dealer perform necessary inspection. | – |

**The engine starts but stalls immediately.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Idling speed setting is too low. | Have an authorized dealer perform necessary inspection. | – |
| The fuel filter is clogged. | Replace the filter element. | 12-41 |
| The air cleaner is clogged. | Clean or replace the filter element. | 12-43 |
| The DPF is blocked. | Have an authorized dealer perform necessary inspection. | – |

**The engine fails to stop.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The fuel injection system is malfunctioning. | Have an authorized dealer perform necessary inspection. | – |
| The starter switch is malfunctioning. | Have an authorized dealer perform necessary inspection. | – |

**Black or white exhaust gas**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The DPF system is malfunctioning. | Have an authorized dealer perform necessary inspection. | – |

**The engine overheats.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The front of the radiator is plugged with dust and dirt. | Clean the radiator with a soft brush. | 12-54 |
| The coolant level is too low. | Add coolant. | 12-46 |
| The engine pressure cap is not closed completely. | Install the cap firmly. | – |
| The fan belt is loose. | Adjust the belt tension. | 12-55 |
| The coolant is contaminated. | Flush the cooling system and replace the coolant. | 12-46 |

**Engine oil pressure does not build up.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Insufficient quantity of engine oil. | Add engine oil. | 12-22 |
| Engine oil viscosity is not adequate. | Replace the engine oil with one of a proper viscosity. | 12-22 |

**Fuel consumption is excessive.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| There is a fuel leak. | Check the fuel system and retighten connections as necessary. | – |
| The air cleaner is clogged. | Clean or replace the air cleaner element. | 12-43 |
| Tire pressure is too low. | Adjust to the adequate inflation pressure. | 12-63 |
| The clutch disc is worn. | Have an authorized dealer perform necessary inspection. | – |

**Engine oil consumption is excessive.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The wrong oil is being used. | Replace the engine oil with a proper one. | 12-22 |
| There is too much oil. | Adjust the quantity to the proper level. | 12-22 |
| There is an oil leak. | Check the oil circuit and retighten connections as necessary. | – |
| Engine oil replacement intervals are too long. | Change the engine oil at prescribed intervals. | 12-22 |
| The oil filter is clogged. | Replace the filter element. | 12-39 |

**Drive power is insufficient.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The parking brake is activated. | Release the parking brake completely. | 5-18 |
| The air cleaner is clogged. | Clean or replace the air cleaner element. | 12-43 |
| The fuel filter is clogged. | Replace the filter element. | 12-41 |
| Air is present in the fuel system. | Bleed the fuel system. | 13-27 |
| Clutch disc is worn. | Have an authorized dealer perform necessary inspection. | – |
| The DPF is blocked. | Have an authorized dealer perform necessary inspection. | – |

**The clutch disengages incompletely. <only manual transmission vehicles>**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Clutch fluid is insufficient. | Add clutch fluid (brake fluid). | 12-34 |
| Clutch pedal play is excessive. | Have an authorized dealer perform necessary inspection. | 12-62 |
| Vacuum is insufficient. | Run the engine at increased speeds to build up the necessary vacuum. | – |

**Braking is sluggish. <other than FE85>**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Vacuum is insufficient. | Increase the engine speed to boost vacuum. | – |
| Brake fluid is insufficient. | Add brake fluid. | 12-34 |
| There is vacuum leak. | Check the vacuum circuit and retighten connections as necessary. | – |
| The disc brake pads or drum brake linings are worn. | Have an authorized dealer perform necessary inspection. | – |
| There is air in the brake fluid. | Have an authorized dealer perform necessary inspection. | – |

**Braking is sluggish. <FE85>**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Brake fluid is insufficient. | Add brake fluid. | 12-34 |
| Power steering system fluid pressure is insufficient. | Have an authorized dealer perform necessary inspection. | – |
| Power steering system fluid pressure is leaking. | Have an authorized dealer perform necessary inspection. | – |
| Power steering fluid is insufficient. | Add power steering fluid. | 12-36 |
| The disc brake pads are worn. | Have an authorized dealer perform necessary inspection. | – |
| There is air in the brake fluid. | Have an authorized dealer perform necessary inspection. | – |

**The vehicle pulls to one side during braking.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Tires are not uniformly inflated. | Inflate tires properly. | 12-63 |
| Tires wear unevenly. | Change the tires. | 12-66 |
| Cargo is heavier on one side than the other. | Load cargo evenly. | 7-18 |

**Steering is difficult.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Cargo is over-loaded on the front side. | Load cargo evenly. | 7-18 |
| Power steering fluid is insufficient. | Add power steering fluid. | 12-36 |
| Front tire pressure is insufficient. | Inflate tires to recommended pressures. | 12-63 |

**The steering wheel vibrates.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Wheel nuts are loose. | Tighten the wheel nuts to specification. | 12-69 |
| Tires are not uniformly inflated. | Inflate tires properly. | 12-63 |
| Tires wear unevenly. | Replace tires. | 12-66 |
| Tires are damaged. | Replace tires. | 12-66 |
| Unbalance is in tires or brakes. | Have an authorized dealer perform necessary inspection. | – |

**The steering wheel does not return to the straight ahead position smoothly.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| Parts are insufficiently greased. | Grease parts. | 12-18 |

**The lamp does not light up.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The bulb is out. | Replace the bulb. | 13-16 |
| The fuse is blown. | Replace the fuse with one of the correct amperage. | 13-9 |
| There is an open circuit or defective grounding. | Have an authorized dealer perform necessary inspection. | – |

**The battery frequently runs down.**

| Possible cause | Remedy | Ref. page |
|---|---|---|
| The battery terminals are loose or corroded. | Scrape off corrosion and tighten down terminals. | 12-79 |
| The fan belt is loose. | Adjust the belt tension. | 12-55 |
| The battery is short of electrolyte. | Add battery electrolyte. | 12-78 |
| The life of the battery has expired. | Replace the battery. | – |
| Idling speed setting is too low. | Have an authorized dealer perform necessary inspection. | – |
| Vehicle is used only at nighttime. | Charge the battery. | – |
| Switches are left on. | Be sure to turn off the switches. | – |
| Faulty alternator | Have an authorized dealer perform necessary inspection. | – |

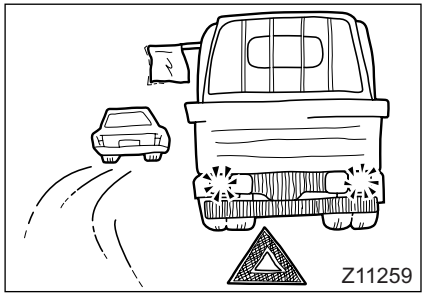
## Stopping your vehicle in an emergency

Should a mechanical failure occur, do not panic. Simply slow your vehicle while paying attention to the vehicles behind you, and pull off the road at a place where you do not hinder the flow of traffic.

**⚠ WARNING**

- **Stopping your vehicle in a tunnel could be dangerous. Wherever possible, drive out of the tunnel before stopping the vehicle.**
- **Be sure to block the wheels with chocks after stopping the vehicle as mechanical failure may render the parking brake inoperative.**

*NOTE:*
*If the engine stops, it is not possible to move the vehicle using only the starter.*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### 1 Marking your vehicle

After you have pulled off the road, alert other drivers as follows so that they do not run into your vehicle.

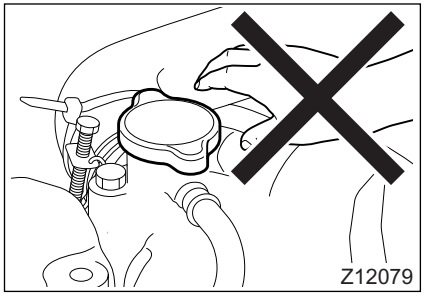
- Flash the hazard warning lamps.
- If your vehicle carries reflective triangles, erect them by the side of the road behind the vehicle.

### 2 Repair

Check the mechanical failure and if you judge it readily repairable, fix it while paying attention to the traffic. If you are unable to repair it, call an authorized dealer for help.

**⚠ WARNING**

**Never attempt to perform repairs on an expressway or in a tunnel as doing so is very dangerous.**


Z12079

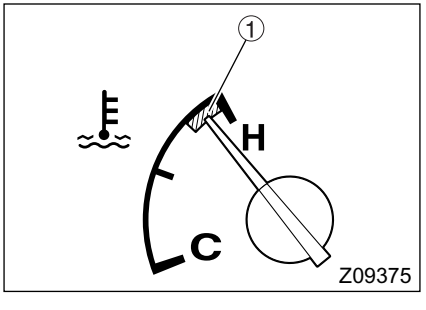
## If the engine overheats

**⚠ WARNING**

**Do not open the pressure cap before the needle in the coolant temperature gauge has come down to approximately the center of the scale. If you open the pressure cap too soon, hot coolant and steam will spray out and scald you. Only after the coolant has cooled down sufficiently, remove the pressure cap by gripping it in a folded piece of thick cloth and opening it slowly.**

**⚠ CAUTION**

- **Be sure to stop the engine only after letting it run at a speed slightly above the idling RPM until the coolant cools down. Turning off the engine immediately after stopping will cause the coolant temperature to rise quickly and may cause the engine to seize up.**
- **Suddenly pouring cold water into the radiator could make the engine crack. Supply cold water a little at a time.**



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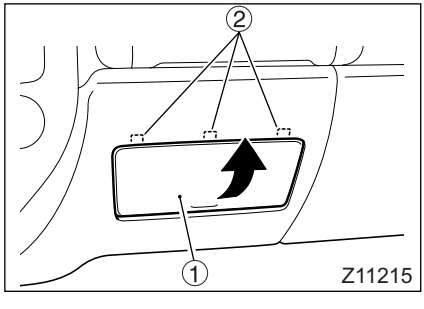
If the needle in the coolant temperature gauge enters the red zone ①, the engine has overheated. Stop the vehicle in a safe place, and allow the engine to cool by using the engine idling control volume or accelerator pedal to run the engine at a speed slightly higher than the idling speed.
When the needle in the coolant temperature gauge has come down to approximately the middle of the scale, stop the engine and perform the following inspections and corrective steps:

1. Check that coolant is not leaking from the radiator hoses or from other parts.
2. Check that the fan belt is not broken and that its tension is normal. ⇨ P. 12-55
3. Check the coolant level. If the level is too low, add coolant.
   - Remove the pressure cap, then add coolant until it reaches the top of the pressure cap opening. ⇨ P. 12-46
   - Remove the reservoir tank cap, then add coolant until it reaches the “FULL” line. ⇨ P. 12-46
4. Check that there is no dirt stuck to the front of the radiator.
5. If coolant leaks or the engine repeatedly overheats, the cooling system is faulty. Have an authorized dealer perform necessary inspection.

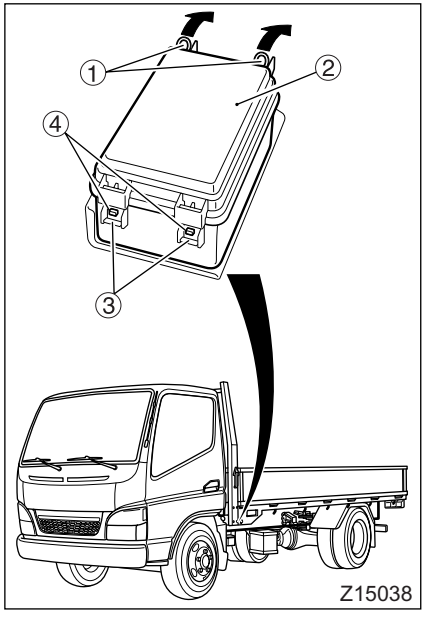
## When a fuse has blown

- The fuse box is located under the center panel. Fuses are also located in the high-current fuse box.
- If a lamp fails to illuminate or electrical equipment does not function, a fuse may have blown. Check and replace fuses as necessary.
- Before checking or replacing fuses, turn the starter switch to the “LOCK” position and push all switches to the OFF position.




### 1 Removal and installation of fuse box cover

1. Pull the bottom of the fuse box cover ① toward you to remove the cover.
2. To install the cover, align and insert the tabs ② at the top then press the bottom of the cover into place.

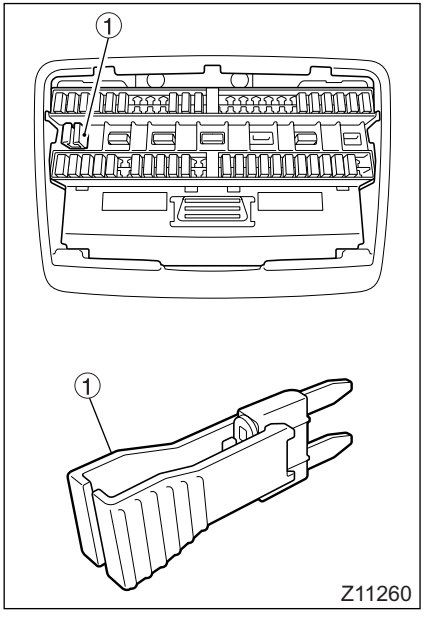



## 2 Removal and installation of high-current fuse box cover

1. Pull down the clamps ①, then lift the cover ② straight upward to remove it.
2. To install the cover, place it on the box and press it straight downward. Align the holes of the clips ③ with the protrusions ④. While still pressing the cover downward, retain it with the clamps.

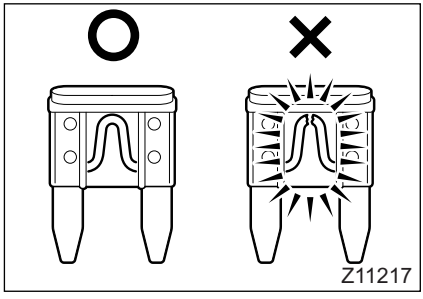
### ⚠ CAUTION

**When installing the high-current fuse box cover, be sure to retain it with the clamps while pressing it straight downward. Pushing the cover toward the inside of the vehicle with excessive force could break it.**




## 3 Fuse replacement

1. To remove the fuse that is to be replaced, grip it using the fuse puller ① in the fuse box. The amperage and protected circuit of each fuse are shown on the inside of the fuse box cover and on the inside of the high-current fuse box cover.




2. If a fuse is blown, be sure to select a spare fuse of the specified amperage for replacement.

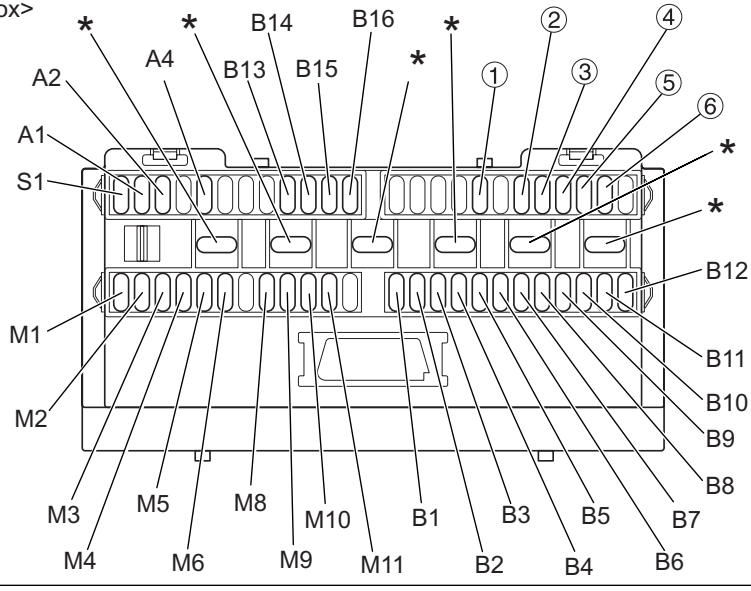
**⚠ WARNING**

**Be sure to use fuses of the specified amperages.**
**A fire could result if a fuse of incorrect amperage is used.**

**⚠ CAUTION**

- **If the cause of a blown fuse cannot be determined or the same fuse blows frequently, have an authorized dealer perform necessary inspection.**
- **Use care not to splash water on or around the fuse box cover. Should water be splashed over the fuse box cover, check the inside of the fuse box for water.**

<Fuse box>

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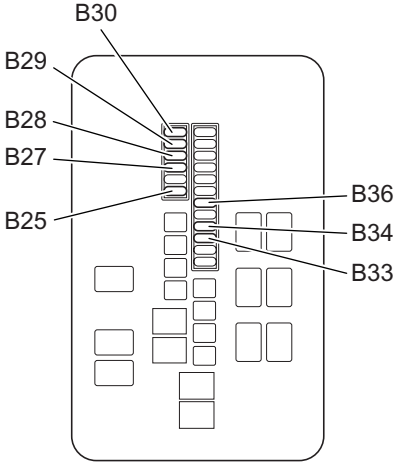
<High-current fuse box>

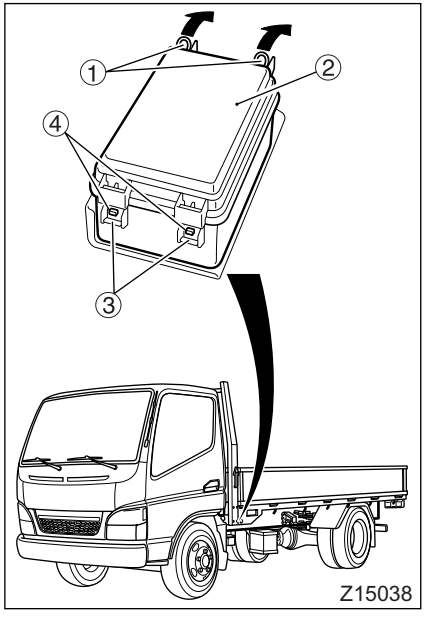



Z16873

| Fuse No. | Amperage | Protected circuit |
|---|---|---|
| A1 | 15A | Cigarette lighter |
| A2 | 10A | Audio system |
| A4 | 10A | Auxiliary power supply (starter switch ACC circuit) |
| B1 | 15A | Stop lamps |
| B2 | 10A | Meter cluster |
| B3 | 15A | Turn signal lamps |
| B4 | 10A | Auxiliary power supply (circuit directly connected to battery) |
| B5 | 10A | Audio system |
| B6 | 10A | Interior lamps |
| B7 | 30A | Power window (driver's) |
| B8 | 30A | Power window (assistant driver's) |
| B9 | 20A | Engine control unit |
| B10 | 10A | MVCU |
| B11 | 20A | Heater mirror |

| Fuse No. | Amperage | Protected circuit |
|---|---|---|
| B12 | 10A | Automatic transmission |
| B13 | 15A | Tester |
| B14 | 20A | Headlamps (high beam) |
| B15 | 20A | Left headlamp (low beam) |
| B16 | 20A | Right headlamp (low beam) |
| B25 | 15A | Tail lamps |
| B27 | 10A | Horn |
| B28 | 10A | Air conditioner |
| B29 | 25A | Air conditioner condenser fan |
| B30 | 30A | Air conditioner blower fan, heater blower fan |
| B33 | 10A | Van body dome light |
| B34 | 20A | Automatic transmission fluid cooler fan |
| B36 | 20A | Engine drive unit |
| M1 | 10A | Backup lamps |
| M2 | 10A | Meter cluster |
| M3 | 15A | Wipers |
| M4 | 10A | Auxiliary power supply (starter switch ON circuit) |
| M5 | 10A | Relay control |
| M6 | 10A | Automatic transmission |
| M8 | 10A | Exhaust brake |
| M9 | 5A | Engine control unit |
| M10 | 10A | MVCU |
| M11 | 10A | ABS |
| S1 | 10A | Starter |

| Fuse No. | Amperage | Protected circuit |
|---|---|---|
| * | 5A | Spare fuse |
| | 10A | |
| | 15A | |
| | 20A | |
| | 25A | |
| | 30A | |
| ① | 5A | Automatic transmission troubleshooting (diagnosis) |
| ② | 5A | ABS troubleshooting (diagnosis) |
| ③ | 10A | ABS troubleshooting (memory clear) |
| ④ | 5A | MVCU troubleshooting (diagnosis) |
| ⑤ | 10A | MVCU troubleshooting (memory clear) |
| ⑥ | 5A | Engine ECU troubleshooting (diagnosis) |

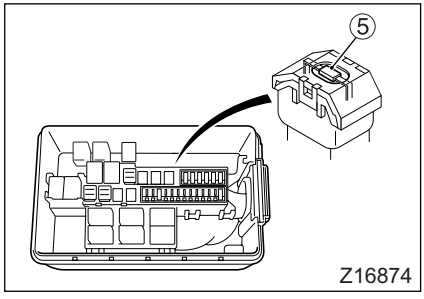



## 4 High-current fuse

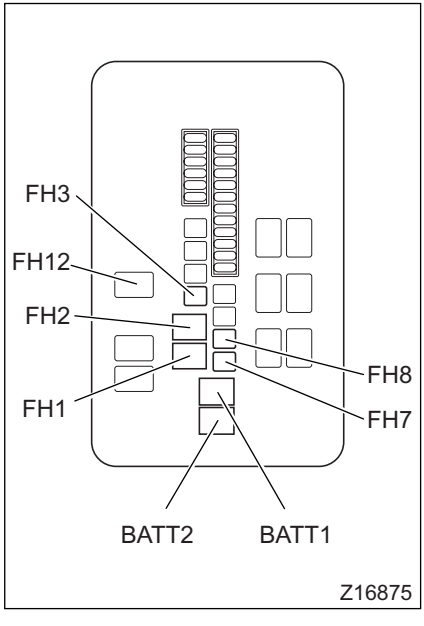
There are high-current fuses between the battery and fuse box, and between the battery and alternator. These protect circuits in the same way that ordinary fuses do. If a high-current fuse is blown, most of the vehicle's electrical circuits become inoperative.

### 4.1 Inspection

1. Pull down the clamps ①, then lift the cover ② straight upward to remove it. To install the cover, place it on the box and press it straight downward. Align the holes of the clips ③ with the protrusions ④. While still pressing the cover downward, retain it with the clamps.
   The amperage and protected circuit of each high-current fuse are shown on the inside of the high-current fuse box cover.




2. Check for a blown high-current fuse by looking into the inside through inspection window ⑤.
   If it is blown, immediately call an authorized dealer and have them check your vehicle.



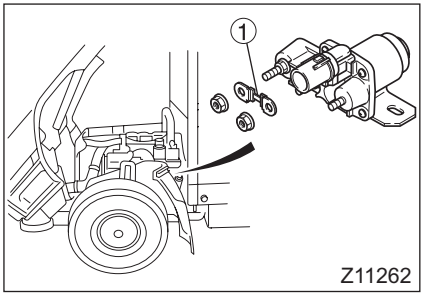

| No. | Amperage (casing color) | Protected circuit |
|---|---|---|
| FH1 | 60A (yellow) | Fuse box (S1, A1 – A5, M1 – M12) |
| FH2 | 60A (yellow) | Fuse box (B1 – B12) |
| FH3 | 40A (green) | Fuse box (B13 – B16) |
| FH7 | 40A (green) | ABS motor |
| FH8 | 40A (green) | ABS valve |
| FH12 | 60A (yellow) | Hydraulic brakes booster |
| BATT1 | 120A (white) | Alternator |
| BATT2 | 60A (yellow) | Glow |

**⚠ WARNING**

**Replacement high-current fuses should always be of the specified amperage. Using a high-current fuse of incorrect amperage could cause a fire.**

**⚠ CAUTION**

- **Close the cover completely to prevent rain water from entering the fuse box.**
- **When installing the high-current fuse box cover, be sure to retain it with the clamps while pressing it straight downward. Pushing the cover toward the inside of the vehicle with excessive force could break it.**




### 5 Engine preheating circuit fuse <FE84, FE85, FG>

**⚠ WARNING**
**Fuses carry electric current constantly. For safety, disconnect the negative battery cable before replacing any fuse.**

If the engine is difficult to start after the ෆ indicator lamp has gone out in cold weather, check to see if the fuse of the preheating circuit has blown out. If the fuse is blown out, first disconnect the cable from the (–) terminal of the battery and then replace the fuse with a new 127A fuse.

**⚠ WARNING**
**Be sure to use fuses of the specified amperages.**
**A fire could result if a fuse of incorrect amperage is used.**

## When a lamp has burned out

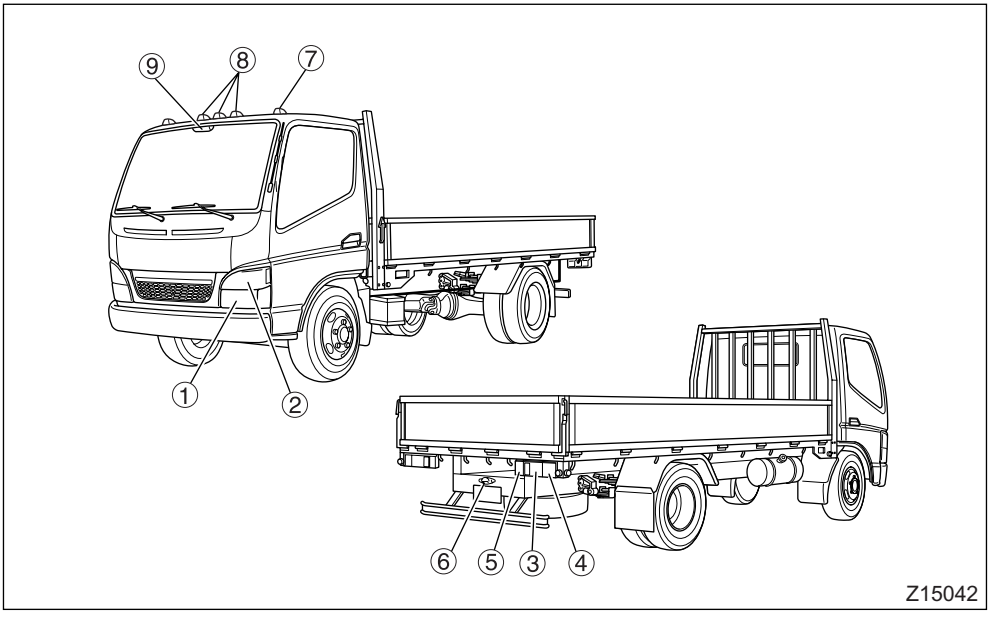
Whenever replacing a lamp, be sure to place the starter switch in the “LOCK” position and all other switches in the OFF position.

**⚠ WARNING**
**Use a lamp of the specified voltage and wattage shown in the following table. If a wrong lamp is used, an excess of current flowing through the wiring could blow a fuse or cause the wiring to overheat and could possibly cause a fire.**

## ⚠ CAUTION

- **Do not directly touch the glass part of a halogen bulb with your fingers. Any oil and other substances contaminating the glass surface could shorten the bulb's service life.**
- **The turn signal lamps have plastic lenses. Do not clean these lenses with alcohol or thinner. Also, be careful not to splash brake fluid on them when adding it to the braking system. Contact with such a substance could discolor or crack the lenses. If such a substance gets on a plastic lens, immediately wipe it off or rinse it off with water.**
- **Burnt bulbs should be replaced as soon as possible.**
- **Do not replace any lamp bulb immediately after it has gone out. The bulb is very hot then and could burn you. Be sure to wait long enough for the bulb to cool down before replacing it.**
- **Do not drop a lump bulb. Flying fragments of glass could hurt you. Be especially careful when handling a halogen lamp bulb as its high inner pressure increases chance of injury.**

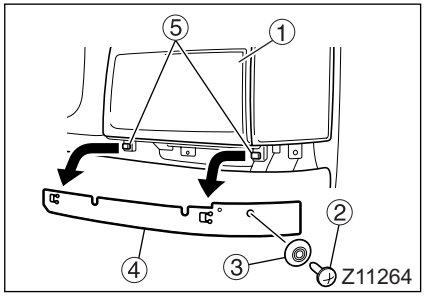
*NOTE:*
*In rainy weather and when the vehicle is washed, condensation can form on the inside surfaces of the headlamp lenses. Just as the windows mist up in rainy weather, the condensation forms owing to a temperature difference between the inside and outside. This phenomenon does not affect the headlamps' functionality. It disappears naturally.*




| Ref. No. | Lamp | Bulb wattage (bulb type) | Q'ty |
|---|---|---|---|
| ① | Headlamp | 12V-60/55W (HB2) | 2 |
| | Parking lamp | 12V-5W (W5W) | 2 |
| ② | Front and side turn signal lamp | 12V-21W (P21W) | 2 |
| ③ | Stop/tail lamp (double filament) | 12V-21/5W (P21/5W) | 2 |
| ④ | Rear turn signal lamp | 12V-21W (P21W) | 2 |
| ⑤ | Backup lamp | 12V-21W (P21W) | 2 |
| ⑥ | License plate lamp | 12V-7.5W (A12V7.5W) | 1 |
| | License plate lamp <Crew-cab or FG models> | 12V-8W | 2 |
| ⑦ | Clearance and side marker lamp | 12V-7.5W (A12V7.5W) | 2 |
| ⑧ | Identification lamp | 12V-7.5W (A12V7.5W) | 3 |
| ⑨ | Interior lamp | 12V-10W | 1 |
| | Interior lamp <rear seats of Crew-cab models> | 12V-10W | 1 |

## 1 Headlamp bulb replacement

For safety and simplicity, bulb replacement is performed with the headlamp removed. The front and side turn signal lamp and dummy lamp must be removed before the headlamp can be removed.



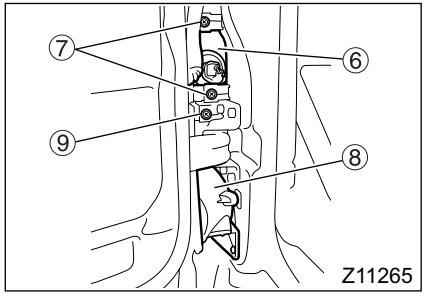

### 1.1 Headlamp removal and installation

- Headlamp removal

1. For removal of the headlamp ①, first remove the screw ② and rivet ③, then move the lamp rubber ④ under the headlamp toward the centerline of the vehicle and release it from the tabs ⑤.

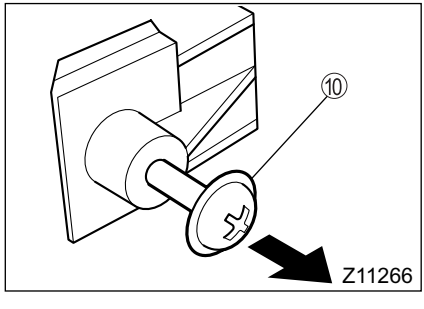
**⚠ CAUTION**

**When removing the lamp rubber, do not pull it with excessive force or the tabs could break.**




2. Open the door, then loosen the screws ⑦ behind the front and side turn signal lamp ⑥ and the screw ⑨ behind the dummy lamp ⑧ until they spin freely.

*NOTE:*
*The screws are designed not to come out.*

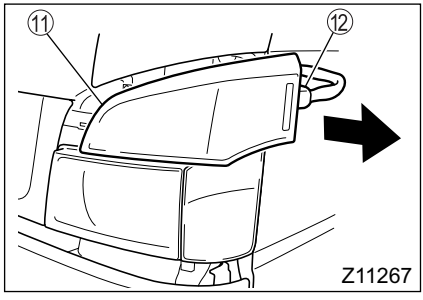



3. Pull out screw ⑩ toward you.

**⚠ CAUTION**

**Unless the screw is pulled out, the front and side turn signal lamp and dummy lamp will catch on it and you will not be able to remove them.**

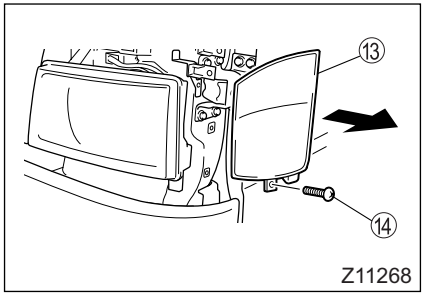
4. Close the door.



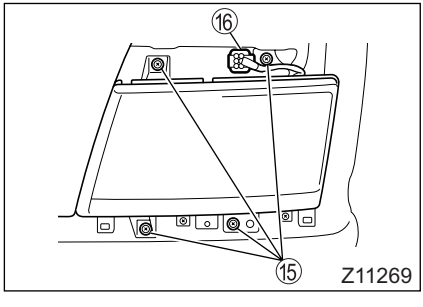

5. Remove the front and side turn signal lamp ⑪ toward the outside of the vehicle, then remove the connector ⑫.

## ⚠ CAUTION

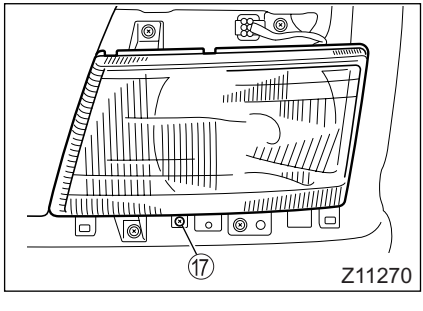
- **When removing the front and side turn signal lamp, do not pull it forward (toward the front of the vehicle) or its tabs could break.**
- **Do not open the door with the front and side turn signal lamp moved outward (but not completely removed) or the door could hit and damage it.**




6. Remove the screw ⑭ at the bottom of the dummy lamp ⑬, then remove the lamp toward the outside of the vehicle.

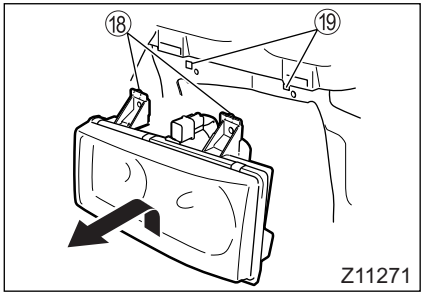



7. Remove the headlamp's bolts ⑮ and connectors ⑯.

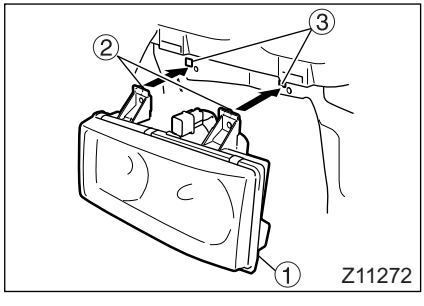



## ⚠ CAUTION

- **Do not turn the beam adjusting screw ⑰. Turning the beam adjusting screw would change the beam setting, thus creating a nuisance for drivers of other vehicles. If you accidentally turn the beam adjusting screw, have an authorized dealer perform necessary inspection.**
- **When setting down the removed headlamp, place it on a soft cloth to avoid scratching the lens.**

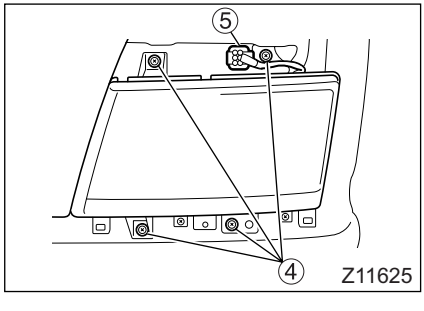



8. Raise the headlamp slightly to remove the tabs ⑱ from the holes ⑲, then pull it out toward you.

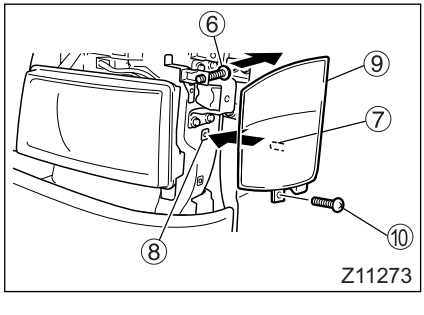



- Headlamp installation

1. Insert the tabs ② on the headlamp ① into the holes ③, and fit the headlamp in place.



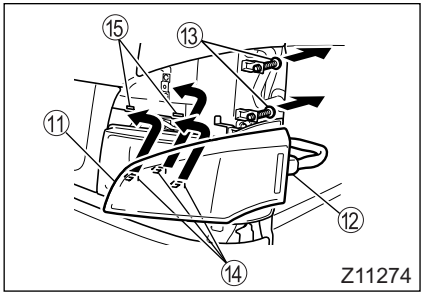

2. Fit the headlamp's bolts ④ and connectors ⑤.



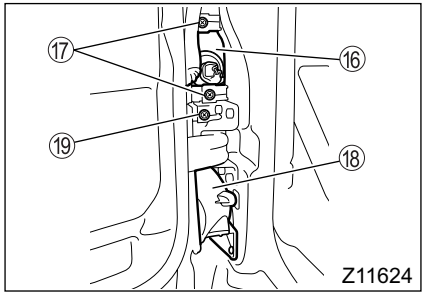

3. Pull out the screw ⑥ in the vehicle.
4. Insert the stud pin ⑦ on the dummy lamp ⑨ into the grommet hole ⑧, fit the dummy lamp in place, and tighten the bottom screw ⑩.

## ⚠ CAUTION

**Do not tighten the screw too tightly or the mounting could get damaged.**



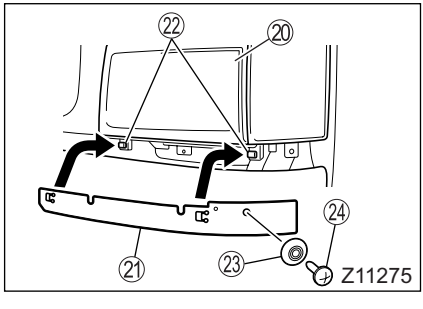

5. Install the connector ⑫ on the front and side turn signal lamp ⑪.
6. Pull out screws ⑬.
7. Align the tabs ⑭ with the holes ⑮, then press the lamp in toward the centerline of the vehicle.



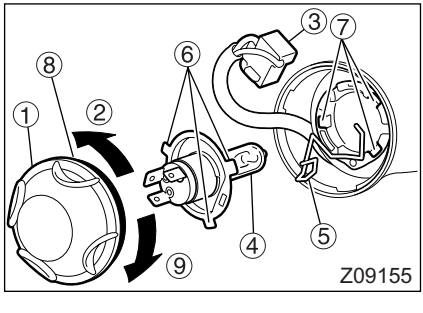

8. Open the door, then tighten the screws ⑰ behind the front and side turn signal lamp ⑯ and the screw ⑲ behind the dummy lamp ⑱.

## ⚠ CAUTION

- **Press the front and side turn signal lamp fully in toward the centerline of the vehicle. If the lamp was not pressed fully into place and you opened the door, the door could hit the lamp and damage it.**
- **Do not tighten the screws too tightly or the mounting could get damaged.**




9. Fit the lamp rubber ㉑ under the headlamp ⑳ onto the tabs ㉒ by moving it toward the outside of the vehicle.
10. Fit the rivet ㉓, then press in the screw ㉔.




**1.2 Headlamp bulb replacement**

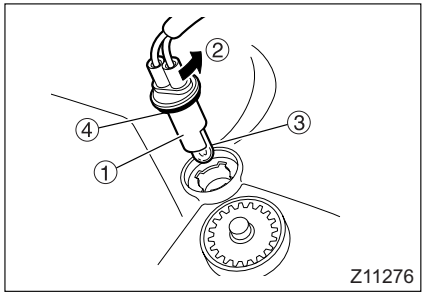
- Removal

1. Remove the cover ① by pressing it and turning it in the direction of arrow ②.
2. Pull the connector ③ toward you to remove it.
3. Remove the spring ⑤ that retains the bulb ④.
4. Remove the bulb.

- Installation

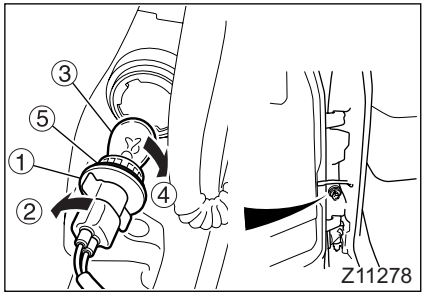
1. Align the tabs ⑥ on the bulb with the grooves ⑦, fit the bulb in place, and retain the bulb with the spring.
2. If the packing ⑧ is dirty, clean it. If the packing is twisted, untwist it.
3. Securely press the connector into place.

4. Fit the cover by pressing it and turning it in the direction of arrow ⑨.



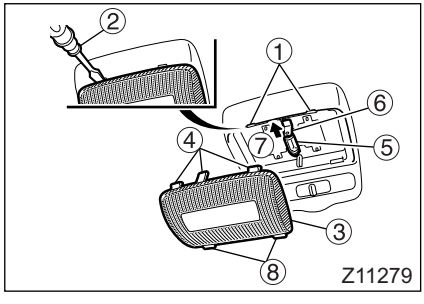

### 1.3 Parking lamp bulb replacement

1. Turn the socket ① in the direction of the arrow ② to remove it.
2. Remove the bulb ③.
3. Perform installation by following the removal steps in reverse.
4. If the packing ④ is dirty, clean it.




## 2 Front and side turn signal lamp bulb replacement

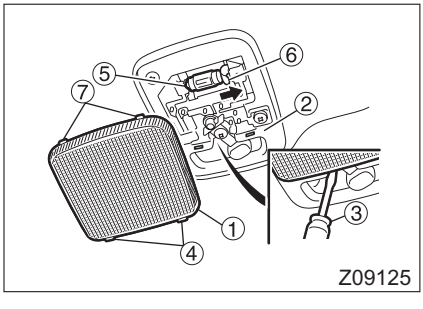
1. Open the door.
2. Turn the socket ① in the direction of arrow ② to remove it.
3. Press the bulb ③ and turn it in the direction of arrow ④ to remove it.
4. Perform installation by following the removal steps in reverse.
5. If the packing ⑤ is dirty, clean it.




## 3 Interior lamp bulb replacement

### 3.1 Other than Crew-cab models

1. Insert a flat-blade screwdriver ② into the notches ① and use it to release the tabs ④ on the bottom of the lens ③. Remove the lens.
2. Push the bulb retainer ⑥ in the direction of the arrow ⑦ and remove the bulb ⑤.
3. To install the lens, insert the tabs ⑧ on the bottom of the lens, align the tabs on the top of the lens, and press the lens into place.

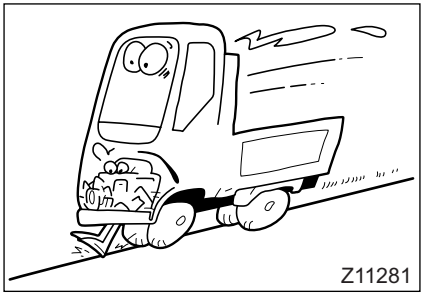



### 3.2 Crew-cab models <front and rear seats>

1. Insert a flat-blade screwdriver ③ between the lens ① and the interior lamp ② and use it to release the tabs ④ on the bottom of the lens. Remove the lens.
2. Push the bulb retainer ⑥ rightward and remove the bulb ⑤.
3. To install the lens, insert the tabs ⑦ on the top of the lens and press the bottom of the lens into place.

### 4 Replacing other lamps

1. Loosen the screw that secures the lens then remove the lens.
2. Turn the bulb counterclockwise while pressing it and remove it.
3. Insert a new bulb and turn it clockwise.
4. Fit the lens, ensuring that the packing is correctly positioned. If the packing is incorrectly installed or twisted, water can enter the lamp and shorten its life. If the packing is dirty, clean it.
5. Uniformly tighten the screws that retain the lens.

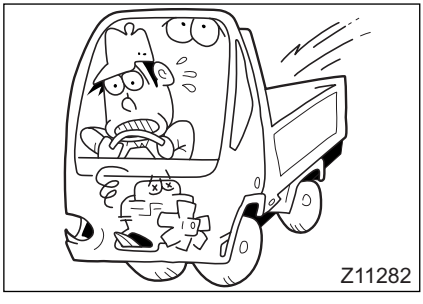

Z11281

## When braking is sluggish

Depress the brake pedal harder than usual, downshift to use engine braking and activate exhaust braking to stop the vehicle. Apply the parking brake when necessary. After the vehicle has been brought into a stop, check parts, then have an authorized dealer perform necessary inspection.

**⚠ WARNING**

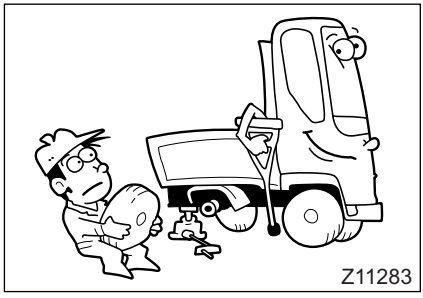
- **Pulling the parking brake lever with full force while driving could cause the vehicle to topple over.**
- **Never continue driving with the brake system malfunctioning or leaking fluid.**


Z11282

## If the engine stalls while the vehicle is in motion

The vehicle will be set into the following very dangerous condition. Pull the vehicle over when safe to do so and try to start the engine.

- The braking force reduces extremely. You must exert additional force on the brake pedal to apply the brakes.
- The power steering system then becomes inoperative, making steering extremely difficult. Additional force must be used when turning the steering wheel.


Z11283

## If a tire goes flat while the vehicle is in motion

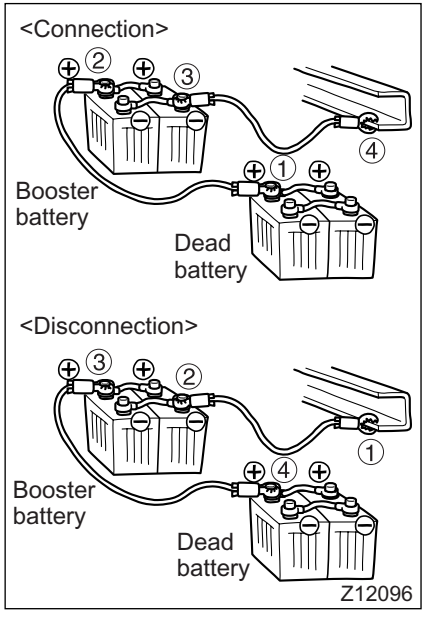
Avoid sudden braking. Hold the steering wheel firmly, and gradually slow down before pulling over at a safe place.
To replace the tire, select a flat surface where your vehicle will not hinder traffic. ⇨📖 P. 12-66

## When the battery has run down

Perform the following procedure to start your engine by connecting your battery to the well charged battery of another vehicle with booster cables.

### ⚠ CAUTION

- **Use booster cables able to handle large currents.**
- **Your vehicle's electrical system operates on a 12V power supply. Confirm that the vehicle giving the boost also has a battery or batteries connected for 12V power supply.**




1. Stop the engine of the vehicle giving the boost.
2. Connect one end of the red booster cable to the positive (+) terminal ① of the dead battery. Connect the other end of the red booster cable to the positive (+) terminal ② of the booster battery.
3. Connect one end of the black booster cable to the negative (–) terminal ③ of the booster battery and connect the other end of the black booster cable to a section of frame ④ on the vehicle with the dead battery at a point as far away as possible from the battery.

**⚠ WARNING**

- **Check the battery's fluid level before connecting booster cables. If the fluid is below the "LOWER" level line, add battery fluid or distilled water. If the battery was charged with an excessively low fluid level, it would deteriorate rapidly and could overheat or explode.**
- **Be careful not to connect the booster cables in the wrong sequence. Sparks are often produced when you connect the booster cable to the vehicle's frame. Therefore, if the cable is connected to a section of the frame near the battery, the spark could set off the hydrogen given off by the battery to cause an explosion. Be sure to connect the cable end to a point as far away as possible from the battery.**
  **Also, keep cigarettes and open flames well away from the battery.**
- **Unless absolutely necessary, avoid starting the engine by towing or pushing the vehicle. Doing so is dangerous because the brakes work poorly and the steering wheel becomes very difficult to turn.**
  **Note that it is not possible to push-start an automatic transmission vehicle.**

4. After the above connections have been completed, start the engine of the vehicle with the booster battery and let it run at an RPM slightly higher than idling speed. Then, attempt to start the engine of the vehicle with the dead battery.
   If the engine starts with difficulty because of cold weather or a dead battery, let it draw a charge for several minutes from the vehicle from which you are receiving the boost before attempting to turn over the engine.
5. After the engine of the vehicle with the dead battery has been started, disconnect the booster cables by reversing the order of connection.

## When the fuel has run out (Bleeding the fuel system)

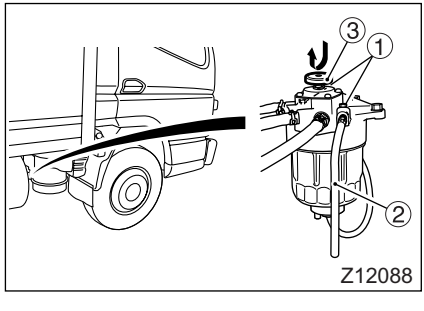
When the vehicle runs out of fuel and the engine stalls, also when the fuel filter has been replaced, or if water has been drained from the fuel filter, air that has entered the fuel system prevents the engine from being started even if the engine has been refueled after running dry.
In these cases, bleed the fuel system by performing the following steps.

### ⚠ WARNING

- **A fire could result if there is a fuel leak or if spilt fuel is not removed. Always wipe off spilt fuel after air bleeding. Also be sure to check for fuel leakage.**
- **The working space for air-bleeding is tight. Be careful not to injure yourself on the edges of nearby parts.**

### ⚠ CAUTION

**The fuel injection system may fail if the engine stops due to lack of fuel.**




1. Connect a hose ② with an inside diameter of 8 mm (0.31 in.) to one of the air vent plugs ① of the fuel filter.

*NOTE:*

- *Use whichever of the two air vent plugs is the most convenient; both plugs provide the same effect. Do not use both plugs together.*
- *Use a transparent hose so you can easily check for air bubbles in the drained fuel.*
- *If no hose is available, cover the air vent plug area with a clean cloth and perform air bleeding.*

2. Loosen air vent plug on the fuel filter by using a wrench.
3. Operate manual pump ③ to pump fuel.
4. Fuel containing air bubbles comes out from the air vent plug.
   Operate the manual pump a few dozen times more until the emerging fuel no longer contains bubbles.

5. When fuel is bubble-free, firmly tighten the air vent plug. Then, operate the manual pump several more times until it becomes hard to press.
   When the fuel is cold, the manual pump may not become hard to press. Even so, you must operate the manual pump several times after tightening the air vent plug.

| | |
|---|---|
| Tightening torque | 10 ± 2 N·m (7.2 ± 1.4 ft.lbs., 1 ± 0.2 kgf·m) |

6. After the fuel system has been completely bled, wipe off spilt fuel and start the engine.
7. Check that there is no fuel leakage.

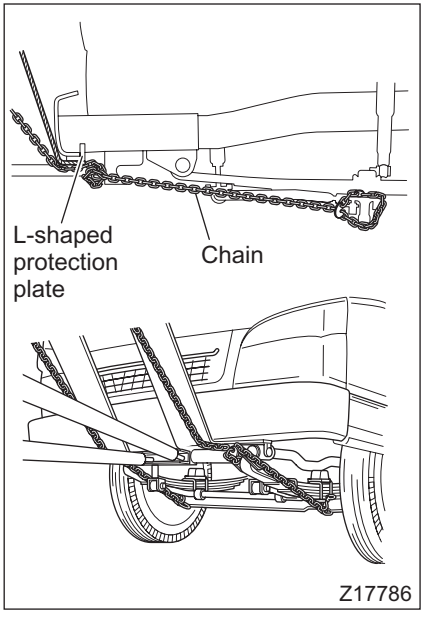
## Towing

If you are forced to tow the vehicle, take the following precautions:

- Disconnect either the propeller shaft or the rear axle shaft, whichever is easier.
  If you disconnect the rear axle shaft, cover the opening to prevent oil and grease from escaping.

### ⚠ CAUTION

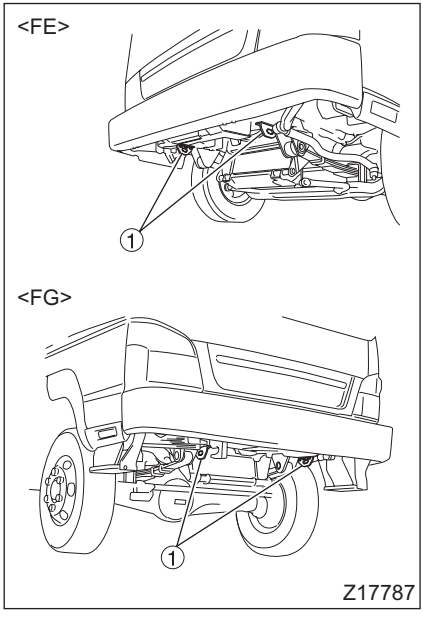
**Before towing an automatic transmission vehicle, disconnect the propeller shaft or rear axle shaft. Alternatively, tow the vehicle with its rear wheels off the ground. Towing the vehicle without taking these precautions would damage the automatic transmission.**




- To prevent damage to the front bumper when raising the front wheels, attach an L-shaped protection plate.
- Attach the towing chain securely to the front axle.

## ⚠ CAUTION

- **Do not attach the chain to the bumper since the bumper would be damaged upon raising the front wheels or towing.**
- **Before raising the front wheels or towing, confirm that the chain will not damage the stabilizer or any other part of the vehicle. If the chain looks likely to cause damage, use a thicker L-shaped protection plates to hold the chain further from the vehicle.**
- **Tow the vehicle only with a specially designed towing truck.**
- **If you disconnect the rear axle shaft to tow the vehicle, the axle housing gear oil may be depleted. Check the axle housing gear oil and add more if necessary.** ⇨ P. 12-33




- **Never use the tie-down hook(s) ① under the frame for towing purpose. The tie-down hook is to secure the vehicle when transporting it. If the hook is used for towing, damage to the front bumper or frame may result.**

## When the vehicle becomes stuck in soft ground

<FG>
If the vehicle becomes stuck in sand, mud, or snow, free it by driving forward and backward.

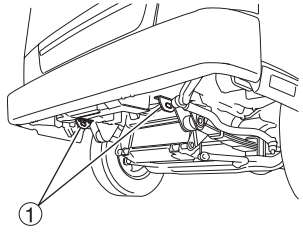
⇨ P. 7-13

If this method is not successful, free the vehicle by towing it as described below.

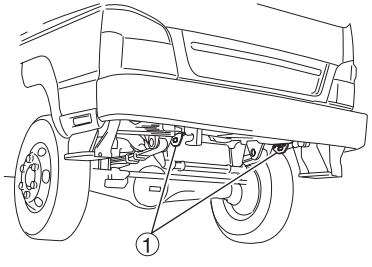
### ⚠ CAUTION

- **Use the towing method described in this section only to free the vehicle from soft ground. To tow the vehicle in the event of a breakdown, use the method described in the previous section.**
- **The stranded vehicle must be unloaded completely.**
- **Never use the tie-down hook(s) ① under the frame for towing purpose. The tie-down hook is to secure the vehicle when transporting it. If the hook is used for towing, damage to the front bumper or frame may result.**

<FE>

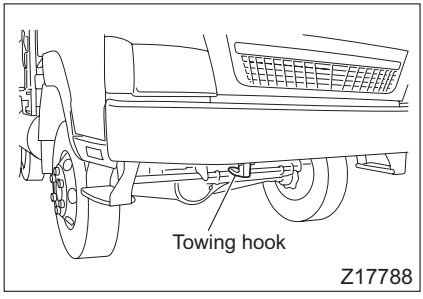



<FG>




Z17787

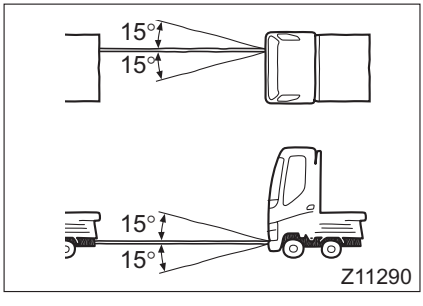
1. Tow the stranded vehicle using a vehicle whose gross weight is equal to that of the stranded vehicle (14,050 lbs., 6,375 kg). Attach the rope or wire rope to the towing hook of the towing vehicle.




2. Attach the other end of the rope or wire rope to the towing hook of the stranded vehicle. If necessary, use another towing hook that is located behind the left-hand side rail.

**⚠ WARNING**

**To avoid the risk of a serious accident, make sure the rope or wire rope is strong enough to tow the stranded vehicle and make sure it does not slip off either vehicle's towing hook.**




3. For the sake of safety, the angle formed by the tow rope when hooked up should be limited to the range indicated in the illustration. Do not tow a vehicle under conditions which could impose sudden undue stress on the hooks (for instance, towing a vehicle out of a ditch) as doing so could break the hooks.
4. Start each vehicle's engine and prepare to start driving.
5. If the rope or wire rope is slack, eliminate the slackness by moving the towing vehicle.
6. Slowly drive both vehicles forward. Do not race either vehicle's engine.
7. When the towed vehicle becomes free, promptly stop it each vehicle by applying the brake pedal. To make the rope or wire rope easy to remove from the towing hooks, let it become slightly slack before stopping the towed vehicle.

# 14. Service data

Recommended lubricants/hydraulic fluids and quantities ..... 14-2
Service data ..... 14-4

## Recommended lubricants/hydraulic fluids and quantities

### 1 Quantities of lubricants/hydraulic fluids

liters (qts)

| Item | | | Quantity |
|---|---|---|---|
| Engine | Oil pan | FE | Approx. 7 (7.4) |
| | | FG | Approx. 8 (8.5) |
| | Oil filter | | Approx. 1 (1.1) |
| Manual transmission | 5-speed | | Approx. 3.6 (3.8) |
| | 6-speed | | Approx. 4.4 (4.6) |
| Automatic transmission | Total quantity | | Approx. 12.9 (14) |
| | Replacement quantity (when drained from drain plug) | | Approx. 6.4 (6.8) |
| Transfer <FG> | | | Approx. 3.1 (3.3) |
| Axle housing | FE | | Approx. 4.5 (4.8) |
| | FG | Front axle | Approx. 3.0 (3.2) |
| | | Rear axle | Approx. 4.5 (4.8) |
| Power steering | FE | Models other than FE85 | Approx. 1.9 (2.0) |
| | | FE85 | Approx. 2.3 (2.4) |
| | FG | | Approx. 1.8 (1.9) |
| Brake fluid (for both brakes and clutch) | | | As required |

**⚠ CAUTION**

**The indicated oil and fluid quantities should be used only as a guide at the time of replacement. To ensure correct oil and fluid levels, use the oil level gauge, inspection plug holes, and level lines as appropriate.**

## 2 Recommended lubricants/hydraulic fluids

Be sure to use the specified lubricants.

| Parts | Category | Classification | Viscosity | |
|---|---|---|---|---|
| | | | Atmospheric temperature | SAE viscosity number |
| Engine | Engine oil | API CJ-4 | Below 0°C (32°F) | 10W–30 |
| | | | Above –15°C (5°F) | 15W–40 |
| | | | Above 30°C (86°F) | 40 |
| Manual transmission Transfer <FG> | Gear oil | API GL-3 | General | 80 |
| | | | Warm region | 90 |
| | | API GL-4 | Tropical region | 90 |
| | Engine oil <not applicable to transfer> | API CC | Long period of high-speed driving | 30 or 40 |
| Automatic transmission | Automatic transmission fluid | Exxon Mobil: Mobil ATF3309 or equivalent | – | – |
| Axle housing *1 | Gear oil | API GL-5 | Below 40°C (104°F) | 90 |
| | | | Above 40°C (104°F) | 140 or 85W–140 |
| Limited-slip differential <vehicles with limited slip differential> | Gear oil for limited-slip differential | API GL-5 Genuine Gear Oil, Part No. 8149630EX | – | 90 |
| Power steering | Automatic transmission fluid | DEXRON, DEXRON II or DEXRON III type | – | – |
| Brake, Clutch | Brake fluid | SAE J1703, FMVSS No. 116 (Grade DOT3) | – | – |
| Chassis grease nipples (rear spring pin, king pin) Door hinge Anchor hooks <Vehicles other than Crew-cab models> | Chassis grease | NLGI No. 1 (Li soap) Consistency 310 to 340 (at 25°C or 77°F) Dropping point 130°C (266°F) or higher | – | – |
| Wheel hub bearing Propeller shaft (universal joint, slip joint, double cardan joint <FG>) | Wheel bearing grease (Multipurpose type grease) | NLGI No. 2 (Li soap) Consistency 265 to 295 (at 25°C or 77°F) Dropping point 185°C (365°F) or higher | – | – |
| Propeller shaft center bearing | Bearing grease | NLGI No. 3 (Li soap) Consistency 220 to 250 (at 20°C or 68°F) Dropping point 250°C (482°F) or higher Usable temperature range –40 to 150°C (–40 to 302°F) | – | – |

*1: At ambient temperatures higher than 10°C (50°F), use an oil conforming to GL-5, SAE140 or SAE85W-140 if the vehicle is used under such a heavy load conditions as continuous upgrade climbing.

# Service data

| Description | | | Standard value |
|---|---|---|---|
| Engine idling speed | | | 625 to 675 rpm |
| Belt tension [amount of deflection under a 98 N (22 lbs., 10 kgf) pressure at the point midway between pulleys] | Fan belt | Vehicles without air conditioner | New belt (when installed): 9 to 11 mm (0.35 to 0.43 in.) |
| | | | Used belt (when inspected or reinstalled): 11 to 13 mm (0.43 to 0.51 in.) |
| | | Vehicles with air conditioner | New belt (when installed): 7 to 9 mm (0.28 to 0.35 in.) |
| | | | Used belt (when inspected or reinstalled): 10 to 11 mm (0.39 to 0.43 in.) |
| Coolant quantity | | | Approx. 16 liters (17 qts) |
| Clutch pedal play (at center of pedal pad) | | | 0.2 to 4 mm (0.0079 to 0.16 in.) |
| Brake pedal play | | | 0.1 to 3 mm (0.0039 to 0.12 in.) |
| Fully depressed brake pedal to floor clearance | | | 20 mm (0.79 in.) or more |
| Parking brake lever stroke | | | 7 to 9 notches |
| Steering wheel play (as measured on the periphery of steering wheel) | | | 5 to 50 mm (0.2 to 1.97 in.) |
| Tire tread groove depth | | | 1.6 mm (0.06 in.) or more |
| Wheel nut tightening torque | | | 440 to 540 N·m (325 to 398 ft.lbs., 45 to 55 kgf·m) |
| Tire inflation pressure | FE83 FE84 | LT215/85R16-10PR (Load Range E) | 550 kPa (80 psi, 5.5 kgf/cm$^2$) |
| | FE85 | 215/75R17.5 124/123L (Load Range F) | 690 kPa (100 psi, 7.0 kgf/cm$^2$) |
| | FG | LT235/85R16-10PR (Load Range E) | 550 kPa (80 psi, 5.5 kgf/cm$^2$) |

# 15. Maintenance schedule

Maintenance schedule . . . . . 15-2
Lubrication schedule . . . . . 15-7

Regular maintenance is vital to maximizing your vehicle's performance, service life, and safety.
Following the maintenance schedule will give optimum results.
The preceding sections describe simple maintenance checks and procedures that can be carried out by the owner. If you have difficulty or your vehicle needs maintenance work that is not shown in this manual, please take the vehicle to an authorized dealer.

Symbols used
I : Inspect, and correct or replace as necessary.
A : Adjust.
C : Clean.
R : Replace or change.
T : Tighten.
L : Lubricate.
•: No inspection is necessary.

## 1 Maintenance schedule

For the replacement intervals of lubricants and fluids, see the section entitled "Lubrication schedule".

Ⓔ: Exhaust emission items.
Ⓝ: Noise control items.

| Item | Time of inspection and maintenance | | | | | | | | | Working procedures | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | Every 90,000 km/ 54,000 miles | Every 250,000 km/ 150,000 miles | | |
| ENGINE | | | | | | | | | | | |
| Leakage of coolant, fuel and oil | I | • | • | • | • | • | • | • | • | Check the underneath of the vehicle for any sign of leakage. | – |
| ⒺⓃ Engine conditions | I | • | • | • | • | • | • | • | • | Check the engine for smooth starting and quiet running. | – |
| Manifold bolts and nuts torque | • | • | • | • | • | • | T | • | • | Check inlet exhaust manifold bolts and nuts for looseness. | – |
| Ⓔ Check and adjust valve clearance | • | I | • | • | • | • | I | • | • | Check valve clearance with thickness gauge. | – |
| Ⓔ Oil filter replacement | • | • | Every 10,000 km/6,000 miles or 12 months | | | | | | | Replace oil filters. | 12-39 |
| Ⓔ Fuel filter replacement | • | • | Every 20,000 km/12,000 miles or 12 months | | | | | | | Replace fuel filter. | 12-41 |

| Item | Time of inspection and maintenance | | | | | | | | | Working procedures | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | Every 90,000 km/ 54,000 miles | Every 250,000 km/ 150,000 miles | | |
| Ⓔ Fuel line | • | • | Every 20,000 km/12,000 miles or 12 months | | | | | | | Inspect the fuel tank, cap and lines for damage causing leakage. | – |
| ⒺⓃ Belts tension and damage | I | • | Every 10,000 km/6,000 miles or 12 months | | | | | | | Inspect belts for crack, wear and tension. | 12-55 |
| Ⓔ Cooling system | • | • | • | I | • | • | • | • | • | Check radiator and pressure cap for sealing performance and mounting condition.<br>Inspect hoses for looseness, deterioration, damage causing leakage. | – |
| | • | • | • | C | • | • | • | • | • | Remove dust and foreign matter deposit from radiator and intercooler front. | – |
| Coolant level | I | • | • | • | • | • | • | • | • | Check that the coolant level is between the “FULL” and “LOW” marks on the reservoir tank. | 12-50 |
| Coolant replacement | • | • | Every 24 months | | | | | | | Replace coolant. | 12-46 |
| Ⓔ Turbocharger rotor play | • | • | • | • | • | • | • | • | I | Check turbocharger rotor play. | – |
| Air cleaner element | • | • | Every 5,000 km/3,000 miles | | | | | | | Clean air cleaner element by blowing clean compressed air. | 12-43 |
| ⒺⓃ Air cleaner element replacement | • | • | • | • | • | R | • | • | • | Replace air cleaner element. | 12-43 |
| ⒺⓃ Exhaust system | • | • | • | I | • | • | • | • | • | Inspect the exhaust system for damage, corrosion and loose connection causing leakage. | – |
| Ⓔ DPF | • | • | Every 10,000 km/6,000 miles or 12 months | | | | | | | Check DPF for blocking. | – |
| | • | • | First 185,000 km/110,000 miles Every 105,000 km/65,000 miles thereafter | | | | | | | DPF Ash Cleaning | 12-81 |
| POWER TRAIN | | | | | | | | | | | |
| Clutch pedal play | I | • | • | • | • | • | • | • | • | Check the clutch pedal for play | 12-62 |

| Item | Time of inspection and maintenance | | | | | | | | | Working procedures | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | Every 90,000 km/ 54,000 miles | Every 250,000 km/ 150,000 miles | | |
| Clutch pedal and clutch disc wear | • | • | I | • | • | • | • | • | • | Check the pedal for free play.<br>Check clutch disc wear. | 12-62 |
| Range selector lever | I | • | Every 30,000 km/18,000 miles or 6 months | | | | | | | Check the operate performance of range selector lever | 12-57 |
| Propeller shaft flange torque and universal joint looseness | • | T | T | • | • | • | • | • | • | Check flange yoke bolts for looseness and universal joint for play. | – |
| Propeller shaft center bearing | • | • | • | • | • | • | I | • | • | Check center bearing if trace of grease flowing out is evident.<br>Check center bearing for wear, damage and play. | – |
| FRONT AND REAR AXLE | | | | | | | | | | | |
| Wheel hub bearing | • | • | • | • | I | • | • | • | • | Check wheel hub bearing for play. | – |
| Wheel hub bearing hub seals replacement | • | • | • | • | R | • | • | • | • | When wheel hub bearing grease is replaced, also replace the wheel hub bearing hub seals. | – |
| Wheel and tire | I | • | I | • | • | • | • | • | • | Check disc wheel for corrosion, deformation and cracks. | 12-63 |
| | I | • | I | • | • | • | • | • | • | Check tire tread and side wall for cracks and damage.<br>Measure tire tread groove depth to make sure it is deep enough.<br>Check tire tread for uneven wear, stepped wear and other abnormal wear. | |
| | A | • | A | • | • | • | • | • | • | Measure inflation pressure with tire gauge. | |
| | • | • | R | • | • | • | • | • | • | Rotate all tires. | 12-74 |
| Retightening wheel nuts | • | T | T | • | • | • | • | • | • | Check wheel nuts for looseness.<br>Check at the first 50 to 100 km/30 to 60 miles after changing a wheel. | 12-73 |

| Item | Time of inspection and maintenance | | | | | | | | | Working procedures | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | Every 90,000 km/ 54,000 miles | Every 250,000 km/ 150,000 miles | | |
| SUSPENSION SYSTEM | | | | | | | | | | | |
| Suspension springs | I | • | • | • | • | • | • | • | • | Check for broken springs and tilt of vehicle body toward either side. | – |
| Retightening U-bolts | • | T | • | T | • | • | • | • | • | Check U-bolt nuts for looseness.<br>Check at the first 1,000 km/600 miles after removing and retightening U-bolt nuts. Do not reuse removed nuts. | – |
| BRAKING SYSTEM | | | | | | | | | | | |
| Service brake pedal | I | • | • | • | • | • | • | • | • | Check brake pedal play and stroke. | 12-59 |
| Brake performance | I | • | • | • | • | • | • | • | • | Depress the brake pedal and check that the brakes work effectively and evenly on all wheels. | 12-60 |
| Disc brake pad and disc | • | • | I | • | • | • | • | • | • | Check disc brake pad and disc for damage and wear. | – |
| Brake lining | • | • | I | • | • | • | • | • | • | Check lining for wear through inspection hole. | – |
| Brake drum | • | • | • | • | I | • | • | • | • | Disassemble and check drum for wear, crack and damage. | |
| Parking brake lever stroke | I | • | • | • | • | • | • | • | • | Check parking brake lever stroke. | 12-61 |
| Looseness, play and damage of brake system parts | • | • | I | • | • | • | • | • | • | Inspect brake lines and hoses looseness, play and damage.<br>Inspect wheel cylinder and brake master cylinder for looseness, play and damage. | – |
| STEERING SYSTEM | | | | | | | | | | | |
| Steering wheel play | I | • | • | • | • | • | • | • | • | Turn steering wheel right and left to measure play at steering wheel rim. Measure while engine is running. | 12-58 |

| Item | Time of inspection and maintenance | | | | | | | | | Working procedures | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | Every 90,000 km/ 54,000 miles | Every 250,000 km/ 150,000 miles | | |
| Steering wheel operation | I | • | • | • | • | • | • | • | • | Check that the steering wheel does not vibrate or pull to one side and that it is not unduely heavy. Also make sure that the steering wheel returns to its neutral position smoothly. | 12-58 |
| Steering system | • | • | I | • | • | • | • | • | • | Check steering system for looseness, steering wheel play and operating condition. Inspect for oil leaks, booster and oil pump function. | 12-57 |
| Drag link ball joint dust boots | • | • | • | • | I | • | • | • | • | Check the ball joint dust boots for cracks and wear. | – |
| CAB | | | | | | | | | | | |
| Defroster | I | • | • | • | • | • | • | • | • | Make sure that warm air blows properly onto the windshield. | 9-3, 9-7 |
| Rearview mirrors | I | • | • | • | • | • | • | • | • | Seated in the driver's seat, adjust the angles for clear views of the sides and rear.<br>Make sure the mirrors are clean. | – |
| License plate and reflector condition | I | • | • | • | • | • | • | • | • | Check the license plate and reflectors for loose installation, damage, and dirt. | – |
| Door locks | I | • | • | • | • | • | • | • | • | Push down the lock knob and verify that the door does not open even when the inner handle is operated. | – |
| Seat belts | I | • | • | • | • | • | • | • | • | Confirm that the seat belt buckles function correctly when fastening and unfastening. | – |
| ELECTRICAL SYSTEM | | | | | | | | | | | |
| Horn operation | I | • | • | • | • | • | • | • | • | Press the horn button to check that the horn is working properly. | – |

| Item | Time of inspection and maintenance | | | | | | | | | Working procedures | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | Every 90,000 km/ 54,000 miles | Every 250,000 km/ 150,000 miles | | |
| Windshield washer fluid level | I | • | • | • | • | • | • | • | • | Confirm that the windshield washer fluid level is above the bottom of the inspection window. | 12-77 |
| Windshield wiper and washer operation | I | • | • | • | • | • | • | • | • | Check the washer for proper fluid spray direction and the wipers for normal action. | 5-22 |
| Lighting system | I | • | • | • | • | • | • | • | • | Make sure that each lamp lights up or flashes properly. Check lamp lenses for dirt and damage. | 5-19 |
| Gauge, warning/ indicator lamp operation | I | • | • | • | • | • | • | • | • | Check that gauges, warning lamps and indicators are working properly. | 6-2 |
| Battery | I | • | • | • | • | • | • | • | • | Check the battery fluid level. | 12-78 |

## 2 Lubrication schedule

Ⓔ: Exhaust emission items.

| Item | Time of inspection and maintenance | | | | | | | Reference page |
|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | |
| Ⓔ Engine oil level | I | • | • | • | • | • | • | 12-22 |
| Ⓔ Engine oil replacement | • | R | R | • | • | • | • | |
| Manual transmission oil level | • | • | I | • | • | • | • | 12-27 |
| Manual transmission oil replacement | • | R | • | • | R | • | • | |

| Item | Time of inspection and maintenance | | | | | | | Reference page |
|---|---|---|---|---|---|---|---|---|
| | | | Inspection interval | | | | | |
| | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | |
| Automatic transmission fluid level | • | • | I | • | • | • | • | 12-29 |
| Automatic transmission fluid replacement | • | • | • | • | • | R | • | – |
| Transfer gear oil level <FG> | • | • | I | • | • | • | • | 12-31 |
| Transfer gear oil replacement <FG> | • | R | • | • | R | • | • | |
| Rear axle housing gear oil level | • | • | I | • | • | • | • | 12-32 |
| Rear axle housing gear oil replacement | • | R | • | • | R | • | • | |
| Front axle housing gear oil level <FG> | • | • | I | • | • | • | • | |
| Front axle housing gear oil replacement <FG> | • | R | • | • | R | • | • | |
| Hub bearing grease replacement | • | • | • | • | R | • | • | – |
| Front axle birfield joint grease replacement <FG> | • | • | • | • | R | • | • | – |
| Front axle kingpin bearing grease replacement <FG> | • | • | • | • | R | • | • | – |
| Front axle steering knuckle grease replacement <FG> | • | • | • | • | R | • | • | – |
| Brake fluid level | I | • | • | • | • | • | • | 12-36 |
| Brake (and clutch) fluid replacement | • | • | • | • | • | • | R | – |
| Power steering fluid level | • | • | I | • | • | • | • | 12-36 |
| Power steering fluid replacement | • | • | Every 50,000 km / 30,000 miles or 12 month | | | | | – |

| Item | | Time of inspection and maintenance | | | | | | | Reference page |
|---|---|---|---|---|---|---|---|---|---|
| | | Pre-operational checks | New vehicle at 4,000 km/ 2,500 miles | Inspection interval: Every 10,000 km/ 6,000 miles | Every 20,000 km/ 12,000 miles | Every 30,000 km/ 18,000 miles | Every 40,000 km/ 24,000 miles | Every 50,000 km/ 30,000 miles | |
| Lubrication of propeller shaft | Center bearing | • | • | • | • | • | • | L | – |
| | Universal joint, slip joint | • | • | L | • | • | • | • | 12-18 |
| | Double cardan joint <FG> | • | • | L | • | • | • | • | 12-18 |
| Lubrication of rear suspension spring pin | | • | • | L | • | • | • | • | 12-18 |
| Lubrication of kingpins | | • | • | L | • | • | • | • | |
| Lubrication of door hinge | | • | • | L | • | • | • | • | 12-21 |
| Lubrication of anchor hook <Vehicles other than Crew-cab models> | | • | • | L | • | • | • | • | 12-21 |

# 16. Alphabetical index

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# 17. MAINTENANCE RECORD

**NOTE:**
The symbols Ⓔ and Ⓝ prefixed to some check items stand for Exhaust Emission Control item and Noise Control item respectively.

**4,000 km / 2,500 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 4,000 km / 2,500 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Check and adjust valve clearance

#### Power train

- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Retightening wheel nuts

#### Suspension system

- ☐ Retightening U-bolts

**10,000 km / 6,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

## 10,000 km / 6,000 miles
### SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

## Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

## Steering system

- ☐ Steering system

**20,000 km / 12,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

# 20,000 km / 12,000 miles
## SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element cleaning
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Suspension system

☐ Spring U-bolt nuts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**30,000 km / 18,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 30,000 km / 18,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)



Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Operate performance of range selector lever (or 6 months)
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel hub bearing
- ☐ Wheel hub bearing hub seals replacement
- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Brake drum
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system
- ☐ Drag link ball joint dust boots

**40,000 km / 24,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 40,000 km / 24,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil level (Manual)
- ☐ Transfer gear oil level <FG>
- ☐ Automatic transmission fluid replacement
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness



Continued on reverse side

### Front and rear axle

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**50,000 km / 30,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____



# 50,000 km / 30,000 miles
## SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil level <FG>
- ☐ Brake (and clutch) fluid replacement
- ☐ Power steering fluid replacement (or 12 months)
- ☐ Lubrication of propeller shaft center bearing
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Manifold bolts and nuts torque
- ☐ Ⓔ Check and adjust valve clearance
- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Coolant replacement (24 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness
- ☐ Propeller shaft center bearing

Continued on reverse side

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**60,000 km / 36,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

**60,000 km / 36,000 miles**
**SERVICE OPERATIONS**

Owner's name: Date:

Address:

Vehicle identification number:

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission fluid level (Automatic)
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element cleaning
- ☐ ⒺⓃ Exhaust system



Continued on reverse side

☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

☐ Clutch pedal and clutch disc wear

☐ Operate performance of range selector lever (or 6 months)

☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

☐ Wheel hub bearing

☐ Wheel hub bearing hub seals replacement

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Brake drum

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

☐ Drag link ball joint dust boots

**70,000 km / 42,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

**70,000 km / 42,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**80,000 km / 48,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

# 80,000 km / 48,000 miles
## SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil level (Manual)
- ☐ Automatic transmission fluid replacement
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness



Continued on reverse side

### Front and rear axle

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**90,000 km / 54,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 90,000 km / 54,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)



Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Operate performance of range selector lever (or 6 months)
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel hub bearing
- ☐ Wheel hub bearing hub seals replacement
- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Brake drum
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system
- ☐ Drag link ball joint dust boots

**100,000 km / 60,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____



**100,000 km / 60,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Brake (and clutch) fluid replacement
- ☐ Power steering fluid replacement (or 12 months)
- ☐ Lubrication of propeller shaft center bearing
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Manifold bolts and nuts torque
- ☐ Ⓔ Check and adjust valve clearance
- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Coolant replacement (24 months)
- ☐ Air cleaner element cleaning
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness
- ☐ Propeller shaft center bearing

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Suspension system

- ☐ Retightening U-bolts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**110,000 km / 66,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

**110,000 km / 66,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook
  <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**120,000 km / 72,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____



**120,000 km / 72,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Operate performance of range selector lever (or 6 months)
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel hub bearing
- ☐ Wheel hub bearing hub seals replacement
- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Suspension system

- ☐ Retightening U-bolts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Brake drum
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system
- ☐ Drag link ball joint dust boots

**130,000 km / 78,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

## 130,000 km / 78,000 miles
### SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element replacement
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**140,000 km / 84,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

**140,000 km / 84,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Suspension system

☐ Spring U-bolt nuts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**150,000 km / 90,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

**150,000 km / 90,000 miles**
**SERVICE OPERATIONS**

Owner's name: Date:

Address:

Vehicle identification number:

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Brake (and clutch) fluid replacement
- ☐ Power steering fluid replacement (or 12 months)
- ☐ Lubrication of propeller shaft center bearing
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Manifold bolts and nuts torque
- ☐ Ⓔ Check and adjust valve clearance
- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)



Continued on reverse side

☐ Ⓔ Coolant replacement (24 months)

☐ Air cleaner element cleaning

☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

☐ Clutch pedal and clutch disc wear

☐ Operate performance of range selector lever (or 6 months)

☐ Propeller shaft flange torque and universal joint looseness

☐ Propeller shaft center bearing

### Front and rear axle

☐ Wheel hub bearing

☐ Wheel hub bearing hub seals replacement

☐ Wheel and tire

☐ Retightening wheel nuts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Brake drum

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

☐ Drag link ball joint dust boots

**160,000 km / 96,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 160,000 km / 96,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil level (Manual)
- ☐ Automatic transmission fluid replacement
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness



Continued on reverse side

### Front and rear axle

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**170,000 km / 102,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

## 170,000 km / 102,000 miles
### SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**180,000 km / 108,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 180,000 km / 108,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission fluid level (Automatic)
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system



Continued on reverse side

☐ Ⓔ Check DPF for blocking (or 12 months)

☐ Ⓔ DPF Ash cleaning (185,000 km / 110,000 miles)

### Power train

☐ Clutch pedal and clutch disc wear

☐ Operate performance of range selector lever (or 6 months)

☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

☐ Wheel hub bearing

☐ Wheel hub bearing hub seals replacement

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Brake drum

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

☐ Drag link ball joint dust boots

**190,000 km / 114,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

**190,000 km / 114,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**200,000 km / 120,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

# 200,000 km / 120,000 miles
## SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil level (Manual)
- ☐ Automatic transmission oil replacement
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Brake (and clutch) fluid replacement
- ☐ Power steering fluid replacement (or 12 months)
- ☐ Lubrication of propeller shaft center bearing
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Manifold bolts and nuts torque
- ☐ Ⓔ Check and adjust valve clearance
- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Coolant replacement (24 months)
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)



Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness
- ☐ Propeller shaft center bearing

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Suspension system

- ☐ Retightening U-bolts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**210,000 km / 126,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

## 210,000 km / 126,000 miles
### SERVICE OPERATIONS

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)



Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Operate performance of range selector lever (or 6 months)
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel hub bearing
- ☐ Wheel hub bearing hub seals replacement
- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Brake drum
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system
- ☐ Drag link ball joint dust boots

**220,000 km / 132,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

# 220,000 km / 132,000 miles

## SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element cleaning
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Suspension system

☐ Spring U-bolt nuts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**230,000 km / 138,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

**230,000 km / 138,000 miles**
**SERVICE OPERATIONS**

Owner's name: Date:

Address:

Vehicle identification number:

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**240,000 km / 144,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 240,000 km / 144,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)



Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Operate performance of range selector lever (or 6 months)
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel hub bearing
- ☐ Wheel hub bearing hub seals replacement
- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Suspension system

- ☐ Retightening U-bolts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Brake drum
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system
- ☐ Drag link ball joint dust boots

**250,000 km / 150,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

**250,000 km / 150,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Brake (and clutch) fluid replacement
- ☐ Power steering fluid replacement (or 12 months)
- ☐ Lubrication of center bearing
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Manifold bolts and nuts torque
- ☐ Ⓔ Check and adjust valve clearance
- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Coolant replacement (24 months)
- ☐ Ⓔ Turbocharger rotor play
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness
- ☐ Propeller shaft center bearing



Continued on reverse side

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**260,000 km / 156,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 260,000 km / 156,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element cleaning
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

#### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

#### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Suspension system

☐ Spring U-bolt nuts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**270,000 km / 162,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

## 270,000 km / 162,000 miles
### SERVICE OPERATIONS

Owner's name: Date:

Address:

Vehicle identification number:

### Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

### Inspection and maintenance

#### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)



Continued on reverse side

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Operate performance of range selector lever (or 6 months)
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel hub bearing
- ☐ Wheel hub bearing hub seals replacement
- ☐ Wheel and tire
- ☐ Retightening wheel nuts

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Brake drum
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system
- ☐ Drag link ball joint dust boots

**280,000 km / 168,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

**280,000 km / 168,000 miles**
**SERVICE OPERATIONS**

Owner's name: Date:

Address:

Vehicle identification number:

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil level (Manual)
- ☐ Automatic transmission fluid replacement
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Ⓔ Cooling system
- ☐ Air cleaner element replacement
- ☐ ⒺⓃ Exhaust system
- ☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness



Continued on reverse side

### Front and rear axle

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

**290,000 km / 174,000 miles**
**SERVICE OPERATIONS**

Owner's name:

Date:

Address:

Total mileage:

Servicing dealer's name:

Address:

Signature:

**290,000 km / 174,000 miles**
**SERVICE OPERATIONS**

Owner's name: Date:

Address:

Vehicle identification number:

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission oil or fluid level
- ☐ Transfer gear oil level <FG>
- ☐ Rear axle housing gear oil level
- ☐ Front axle housing gear oil level <FG>
- ☐ Power steering fluid level
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ ⒺⓃ V-belts tension and damage (or 12 months)
- ☐ Air cleaner element cleaning
- ☐ Ⓔ Check DPF for blocking (or 12 months)
- ☐ Ⓔ DPF Ash cleaning (290,000 km / 175,000 miles)

### Power train

- ☐ Clutch pedal and clutch disc wear
- ☐ Propeller shaft flange torque and universal joint looseness

### Front and rear axle

- ☐ Wheel and tire
- ☐ Retightening wheel nuts



Continued on reverse side

### Braking system

- ☐ Disc brake pad and disc
- ☐ Brake lining
- ☐ Looseness, play and damage of brake system parts

### Steering system

- ☐ Steering system

**300,000 km / 180,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____

Date: _____

Address: _____

_____

_____

Total mileage: _____

Servicing dealer's name: _____

_____

Address: _____

_____

Signature: _____

**300,000 km / 180,000 miles**
**SERVICE OPERATIONS**

Owner's name: _____ Date: _____

Address: _____

Vehicle identification number: _____

## Lubrication

- ☐ Ⓔ Engine oil replacement (or 12 months)
- ☐ Transmission fluid level (Automatic)
- ☐ Manual transmission oil replacement
- ☐ Transfer gear oil replacement <FG>
- ☐ Rear axle housing gear oil replacement
- ☐ Front axle housing gear oil replacement <FG>
- ☐ Wheel hub bearing grease replacement
- ☐ Front axle birfield joint grease replacement <FG>
- ☐ Front axle kingpin bearing grease replacement <FG>
- ☐ Front axle steering knuckle grease replacement <FG>
- ☐ Brake (and clutch) fluid replacement
- ☐ Power steering fluid replacement (or 12 months)
- ☐ Lubrication of propeller shaft center bearing
- ☐ Lubrication of universal joints, slip joint
- ☐ Lubrication of double cardan joint <FG>
- ☐ Lubrication of rear suspension spring pin
- ☐ Lubrication of king pins
- ☐ Lubrication of door hinge
- ☐ Lubrication of anchor hook <Vehicles other than Crew-cab models>

## Inspection and maintenance

### Engine

- ☐ Manifold bolts and nuts torque
- ☐ Ⓔ Check and adjust valve clearance
- ☐ Ⓔ Oil filter replacement (or 12 months)
- ☐ Ⓔ Fuel filter replacement (or 12 months)
- ☐ Ⓔ Fuel line (or 12 months)



Continued on reverse side

☐ ⒺⓃ V-belts tension and damage (or 12 months)

☐ Ⓔ Cooling system

☐ Coolant replacement (24 months)

☐ Air cleaner element cleaning

☐ ⒺⓃ Exhaust system

☐ Ⓔ Check DPF for blocking (or 12 months)

### Power train

☐ Clutch pedal and clutch disc wear

☐ Operate performance of range selector lever (or 6 months)

☐ Propeller shaft flange torque and universal joint looseness

☐ Propeller shaft center bearing

### Front and rear axle

☐ Wheel hub bearing

☐ Wheel hub bearing hub seals replacement

☐ Wheel and tire

☐ Retightening wheel nuts

### Suspension system

☐ Retightening U-bolts

### Braking system

☐ Disc brake pad and disc

☐ Brake lining

☐ Brake drum

☐ Looseness, play and damage of brake system parts

### Steering system

☐ Steering system

☐ Drag link ball joint dust boots